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THE HOUSING SHORTAGE AND THE RENT RESTRICTION ACT.

WE have devoted much time and consideration to the problem of housing with the object of helping to arrive at a satisfactory solution. As a problem we have tried "to see it whole," and we hope we are contributing to this end by suggesting that outside criticism should be broadened and the issues narrowed. We view with reserve *ex-parte* pronouncements or arguments, and we have repeatedly pointed out the danger of creating opinion based upon a one-sided representation of the facts. We deprecate recourse to *ex-parte* standpoints and to the *ex-parte* spirit, because we do not think they realise the vital relation of all the facts to sound opinion.

We think we should draw sensibly nearer to some solution of the housing problem if it could be subdivided into two main issues :—

1. The providing of houses in the immediate future while the shortage is acute, and while the economic balance is upset.
2. The consideration of the whole problem of housing by a Select Committee, bearing in mind the experience gained in the Government Housing Schemes, with the ultimate view of securing whatever legislation and safeguards may be found to be necessary.

We suggest the subdivision because it seems to us that the general conditions at the moment are abnormal, while the particular conditions which apply to housing are wholly artificial. If we attempt to take the long view it is impossible to come to any definite conclusions regarding the houses of the future when the whole aspect of things may alter during the next twelve months, and similarly it is unwise to deal with the immediate problem of housing on the assumption that existing conditions will be permanent. The reasonableness of the argument is apparent when it is realised that the first clause (1) is controlled by the Rent Restriction Act, or, in other words, the supply of houses is one problem, the kind or type of houses to be erected in the future—perhaps under different conditions—is another problem (clause 2). Further, we realise that we are discussing two extremes—a housing shortage amidst trade depression and unemployment, following upon a gradual deflation in prices during the past two years. This is the immediate condition which has its connection with the Rent Restriction Act (1), whereas the general conception of the houses of the future should be based upon conditions which are neither abnormal nor anomalous. We therefore assume that the present economic conditions are partly artificial and partly conventional, and neither of them can be accepted as being permanent.

The problem of shortage of houses is bound up with the working of the Rent Restriction Act, which is in general principle similar to many of the controls which were in operation during the period of the war. Most of the controls were fixed with the object of encouraging the supply (as in agriculture); consequently a high price was fixed and was paid as a tax upon the nation. The object of the Rent Restriction Act was quite different; it prevented the immediate hardships which would have resulted had rentals risen to an economic level, but in doing so it automatically cut off the supply of houses. We created a monster which has placed us in a dilemma, and the state of affairs will continue until it is possible to reach an economic adjustment, either by increasing rentals or the cost of building falling until it meets the level of existing rentals.

In any criticism we have to make on the Rent Restriction Act we bear in mind that the Government was faced with the necessity for a decision one way or the other, and we feel that it acted wisely at the time. It is, of course, easy to disagree with the policy, but it should be realised that there is a point when some things pass from the realms of facts into the realms of policy. With this we have no concern, but it would have been much more difficult to win the war by concentrating on house-building; and we might have lost the war by fostering domestic discontent through hardship.

The suggestion has been put forward by the daily Press that the appalling housing conditions to-day are part of the price which the community has to pay for the Rent Acts, and that "the sooner we face a position which is bound to be troublesome at any time, the sooner shall we be on the road to recovery." We recognise that the present position has been to a large extent created by the Rent Acts and that a splendid opportunity of cancelling them was lost two or three years ago, but we doubt whether it would now be wise to abolish them while there is so much unemployment and poverty. But it is useless to blind ourselves to the lamentable fact that in the heyday of prosperity there were waiting lists extending twelve months ahead for motor-cars, each costing as much as a house, while many of the prospective owners were safeguarded in a very satisfactory house speculation, and contributed greatly towards the housing shortage. In a lesser degree the same theory holds good regarding workmen's dwellings, and in this connection we may quote the following extract from the *Birmingham Post* : "It is lamentable to reflect that if at the time of inflated wages an attempt had been made to put the industry upon a proper footing by giving owners an economic rent, the position and outlook to-day would have been so different."

The motor-car, the char-à-banc, and the cinema were factors in the social life of a community which was spending much wealth in the pursuit of pleasure, and perhaps this phase is not to be wondered at when it ran concurrently with a housing shortage and a Government-subsidised housing programme. We do not wish to enter into a discussion regarding the philosophy of human conduct; we merely point out that a house of some sort is a necessity, whether owned or rented, and a far-seeing nation would have refused to contract huge losses in State housing while its citizens enjoyed themselves. They ceased to see their responsibilities, and it seemed a simple expedient to lean on their neighbours until they began to lean on one another, and incidentally proved that the national exchequer was their own pockets. We confess that it is difficult to prove that money spent upon certain luxuries is wholly waste, in the economic sense, but it is an undeniable fact (which is often overlooked in talking of our heavy taxation burdens) that the cost of the war was considerably lessened by the fact that we were paying by denying ourselves many luxuries and curtailing many actual wants which we once regarded as necessities.

Admittedly the position is different now, and we only mention this aspect here because it appears to be a matter of policy, and if we have to consider housing subsidies as a policy we should not neglect the attitude of those upon whom the burden appears to fall. The workman himself would think twice about housing subsidies and losses in houses borne by the State if he thought that in time the taxation would be reflected in his wages. This is not an idle suggestion, and there seems little doubt that this adjustment will take place eventually, despite our attempts to be generous or any attempts to make us generous.

This is a paralysing reflection which is worthy of further investigation from social reformers who, we think, are apt to confuse the question of better housing—which is a problem by itself—with the obsession that only the State can afford to give us the advantage without any of the disadvantages. The idea of getting something for nothing is so flagrantly obvious that it seems natural to look for the flaw, and if we do, we can see that it is possible to formulate a wonderful set of ideals for a model State, but—to quote Sir Lynden Macassey—"like the toy with no works inside." We submit that good housing is perhaps the most important factor in the social life of a nation, but that no one can be convinced that better houses and better conditions would have been an economic impossibility prior to the war had we granted the individual the powers created for the recent housing schemes. Our outlook upon the immediate shortage of houses is simplified if we can assume that ideal housing and subsidies are not permanently inseparable.

NOTES.

The Proposed St. Paul's Bridge

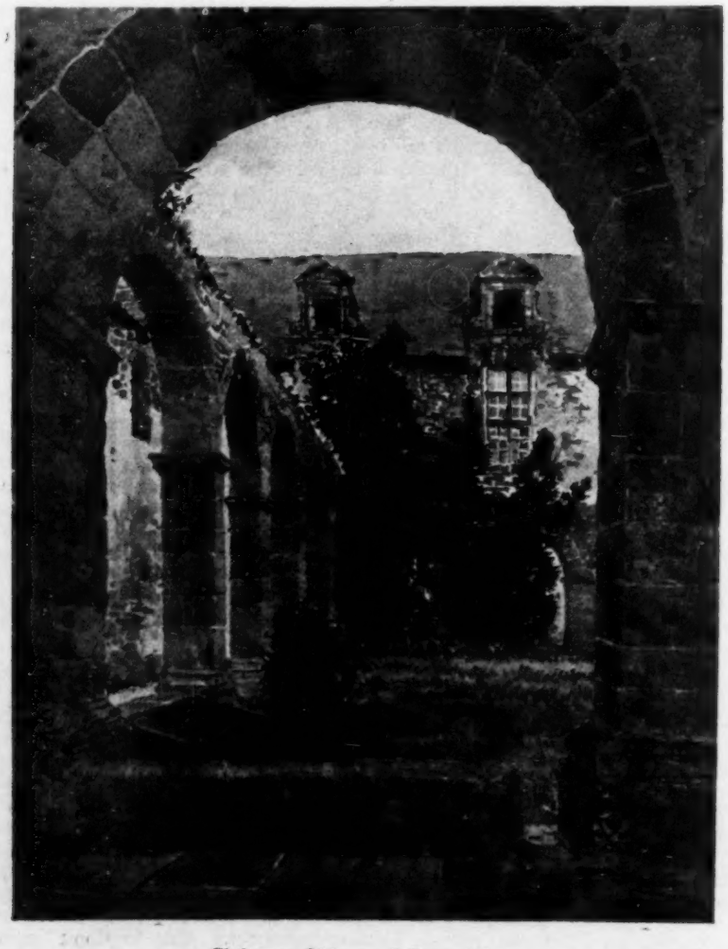
THE plan of bridges across the Thames which we publish (see p. 822) to-day sets graphically forth the position as regards the communicating channels between the north and south banks of the Thames. The close contact of Southwark and St. Paul's Bridges is apparent, as well as the long unserved area from Waterloo to Westminster. It has been asserted that a new road bridge at Charing Cross would lead to traffic congestion at Charing Cross, but would there be no traffic congestion resulting at the east end of St. Paul's if the St. Paul's Bridge is built? But we do not want special pleading on such a subject; we want the best thing to be settled for the future of London, which has been so terribly overlooked through all the past years.

The Architect and the Specialist.

A COMMENTARY on the issue raised by Mr. Hamp as to the architect's position in regard to the development of specialised knowledge in relation to architecture and building is to be found in Mr. Tye's paper to the R.I.B.A. on "Illuminating Engineering." He says plainly: "It is impossible for an architect to be fully conversant with all the latest applications of lighting." He says, moreover, that it is not necessary, as those engaged in its study and practice are ready to place their knowledge at the architects' disposal. Nevertheless, the illumination of a building is not always the question of getting the utmost degree of lighting power; the method and positions of illuminating media would not present the same problems in a country house as in a warehouse.

Illuminating Engineering and the Discussion.

THE paper on "Illumination" showed clearly the great interest it has for the architect, as, for instance, in the remarks of Mr. W. R. Rawlings, who pointed out how directly the question of better lighting had affected plans of buildings, as some of our most comfortable corners are now under the pavements of streets. Mr. Rawlings said the pictures shown at the lecture showed too much of the engineering side and too little of the architectural, and spoke strongly in favour of the architect's influence in design being felt; he also made some pertinent remarks on the lighting of the billiard table. As illustrating the architect's point of view the President's remarks were much to the point. Amongst other things he said architects set a value on shadow as well as light—how to get effective shade without loss of efficiency in light. The paper by Mr. Tye has a somewhat forbidding look in the printed page, but the paper and its discussion must have helped to widen our outlook and knowledge in a subject which is of great interest to the architect.



Cloiture, Abbaye, Lehon, Dinan.
From a Sketch by MR. A. C. FARE.

Women and House Fitments.

IT would be better for architects if the public could be persuaded to remember that all the faults of all the old houses cannot be laid at their doors. But we may welcome the well-deserved criticism of old nineteenth-century houses if they lead the public to demand better things. It pays to have an entrance door in oak, well-fitted constructional furniture, properly lighted cupboards, fixed lavatory fittings in bedrooms, and it is better to have nice maisonettes rather than flats; let us hope the counsel of perfection may be more frequently translated into actuality. Such a paper as that read by Miss Edith Place to the Architectural Association on Monday helps to focus attention on some essentials of good home-planning: it is well to have ideals before us and get as near to them as we can. We note that advice is seldom given as to the right use of a house, when we get a good one, but it would take some time to disturb the public belief in carpets and door and window hangings, though the lecturer suggested they were largely the fruits of bad construction. Only the other day we came across an example of the bad usage of a house, wherein a good polished wood-block floor was covered with linoleum and dry-rot set up, so that the next tenant, who had the sense to appreciate the floor, had to relay many blocks before getting it back to its original state.

Those £13,000 Houses.

UNDER this heading, the daily papers have published an account of the financial position in respect to the City of London housing scheme at Ilford, and many reasons have been given for the apparent prodigious cost of these houses. We can contribute some additional reasons why we should expect the Ilford houses to cost a good deal more than usual. They are built on a different scale to the ordinary Government houses. They are all semi-detached; they all have four bedrooms and two w.c.'s and they are exceptionally rich in passages. They are, in fact, what is known as "middle-class" or "black-coated" houses, and they would naturally cost more than the normal, although the

Doorway at Plas Uchaf.

figure quoted has no real connection with the actual cost of the houses concerned, since it is arrived at by misleading methods.

Motherwell and the Judge.

IT is not every day that a disciple of Lenin sees eye to eye with one of His Majesty's judges, but this anomaly was reported last Friday. Mr. Newbold, the Communist Member for Motherwell, in his maiden speech, informed the House that propaganda did not make revolutions, and that it was not propaganda that sent him to the House of Commons but the vile housing conditions in his constituency. On the same day, Mr. Justice Greer, addressing a Grand Jury at Leeds, said that two things filled him with dismay. The first was the dim, gloomy, grimy condition of the city; the outsides of the fine public buildings being debased by smoke, soot, and dirt, while surrounding them were miles and miles of mean streets, with houses composed of blackened bricks. The second cause of his dismay was the character of the calendar and the nature of the offences; and his lordship expressed the opinion that these two evils were interconnected. If Mr. Newbold and the judge's remarks can bring it home to the House of Commons that a dingy and depressing environment is an intolerable evil, and the main cause of the decision on the part of the Motherwell electors that revolution is the only cure, a great deal will have been effected. Merely to pass through Motherwell is enough to make a man wonder whether such places can result from anything but a wrong conception of man's mission in the world. We hope the new Government may see its way to deal with smoke and slums, and, above all, to set an example of more enlightened and humane opinion in respect to the future growth and development of our towns.

Staple Inn.

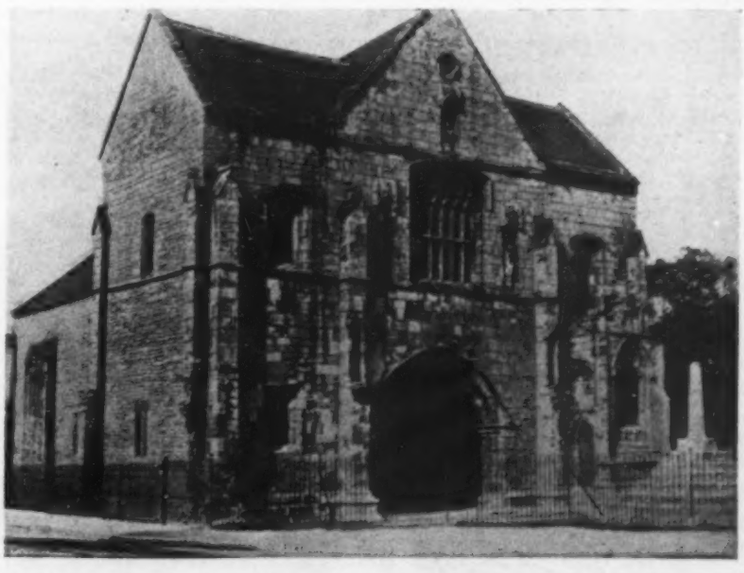
IT is only a short time since we had occasion to refer to this beautiful old Inn, now the property of the Prudential Assurance Co. Mention was made at that time of the beautiful plane tree rising out of the stone-flagged court which was such an attractive feature and gave such pleasure to the pedestrians who so often rested under the cool shelter of its leafy boughs. Alas, that it should delight us no more—"the poplars are felled, farewell to the shade." How many thousands must have known and cared for this sheltered retreat which has now been taken from them. Situated in the heart of the city it was a pleasure to pass from the roar of Holborn into this green and cloistered retreat. There may be reasons for the felling of this plane tree, but we do not know them.

Election of Mrs. Swynnerton.

THE election of this distinguished artist to Academy honours is one of those cases in which it may be said that she bestows an honour rather than receives one. She well illustrates the example of that finest kind of artist, appealing through the nobility of her work and remaining quietly out of the limelight herself. The vision and mastery of her art, the indefinable quality of style which pervades it, have that dignity which belongs to very few. Her art has all the romance of its own superb detachment and self-determination, and is compacted of herself, and its qualities include a grasp that can hardly at this day be challenged by any contemporary. Angelica Kauffman, to refer to another notable artist, was more confined and conventional in her outlook, more derivative, less adventurous, and her art rested more on the fashion of the time—a charming rather than a great artist. Mrs. Swynnerton, passing through earlier influences, such as that of Watts, hews her own path, and with a quality of representation which in its truest meaning is wholly religious, as being the expression of an intellect informed with vision. One hardly knows how to describe it, but its vital human interest would appear to be held in a self-discipline that no mere worldly ambitions alone could possibly include. We offer our homage to her on this occasion. She is the first woman Associate of the Royal Academy since 1768.

Whalley Abbey.

IT is interesting to record that Whalley Abbey, the ancient Cistercian home, near Blackburn, which has remained in secular hands since the dissolution of the monasteries four hundred years ago, has become again a home of religion, part of it in Catholic hands and part in Anglican. Nearly a year ago the Catholics acquired the monks' dormitory and several acres of land adjoining it for conversion into a church and burial ground. The dormitory, which is the only really useful remaining part of the original buildings, had been used as a stable and hay loft before the Catholics rescued it. It is the first time since the Reformation, we are told, that the Catholics of this country have re-entered into possession of any of their old monastic property. The gateway, once the main entrance to Whalley Abbey, stands detached from the ruins, and forms the one striking feature which has impressed the casual visitor. It has not yet been decided what is to be done with the portion recently acquired by the Anglicans, but there is a suggestion that the new Bishop of Blackburn should make the Abbey his home.



The Priory Gatehouse, Worksop.

GENERAL NEWS.

Church Destroyed by Fire.

St. George's Church, Kidderminster, which was erected in 1824, was last week destroyed by fire.

Sir Christopher Wren.

Country Life book publishing department have in the press for early publication a short study of Sir Christopher Wren, from a new angle, by Sir Lawrence Weaver.

Royal Naval and Marine Maternity Nursing Home, Gillingham.

This Home was formally opened by H.H. Princess Marie Louise on Thursday last week. Mr. Charles W. W. Thompson, A.R.I.B.A., F.S.I., is the architect.

Architects' Fees for State-Aided Housing Schemes.

The Ministry of Health and the Tribunal appointed by the R.I.B.A. are anxious to obtain a settlement of all claims for architects' fees in connection with State-aided housing schemes without further delay. Architects who still desire the assistance of the Tribunal are therefore requested to apply to the Secretary of the R.I.B.A. on or before December 31, 1922. The Tribunal cannot undertake to deal with cases submitted to them after this date.

Bethnal Green Museum.

In 1885 Mr. Joshua Dixon, a collector of pictures, bequeathed to the Bethnal Green Museum the whole of the paintings in his house, Winslade Park, near Exeter, for the benefit of the public of East London, where he was born in 1810. Half of this bequest consisted of very carefully chosen water-colours by artists of the British School. As a part of the process of reorganisation which the Bethnal Green Museum is at present undergoing, these water-colours have now been re-arranged and are suitably exhibited in the Central Hall, where they are given a prominence they deserve. The Museum is open free from 10 a.m. to 5 p.m. on weekdays, and from 2.30 to 6 p.m. on Sundays.

British Industries Fair.

The preliminary arrangements for the booking of space and stands at the British Industries Fair (Birmingham) for the 1923 Fair, to be held from February 19 to March 2, are rapidly nearing completion. The structural alterations that will make the permanent buildings of the Castle Bromwich Aerodrome the largest exhibition hall in the country are proceeding apace and will be quite completed by next February.

G.W.R. War Memorial.

Lord Churchill (Chairman of the Great Western Railway Company) unveiled recently a memorial at Paddington station in honour of the 25,479 men of the railway who joined the forces, and in memory of the 2,524 who gave their lives. The memorial, erected in the centre of the principal down-line platform, consists of a bronze figure of a soldier garbed for the rigours of winter trench life. He has just opened a letter from home, which he is in the act of reading. The memorial was designed and sculptured by Mr. C. S. Jagger, M.C., R.B.S., who served in the war and was twice wounded.

Obituary.

We regret to announce the death of Mr. Howard Henry Thomson, F.R.I.B.A., which recently occurred at a nursing home in London following an operation. The deceased gentleman, who carried on business at 8, Market-street, Leicester, was 57 years of age. Born and educated at Exeter, he was articled to Mr. J. Crocker, of that city, and went to Leicester about 36 years ago as assistant to Mr. A. Wakerley. He afterwards went into practice with Mr. J. Blackwall, of Kettering, and conducted the Leicester office. He had been in practice for himself since 1904, first at Halford-street chambers, later on taking over the practice of Goddard & Catlow, at Market-street, Leicester. He became a member of the Institute in 1889 and was elected a Fellow in 1906. He was President of the Leicester and Leicestershire Society of Architects from 1906 to 1908, and was an acting member of the Council up to the time of his death.

The death has recently occurred at Stoke-on-Trent, of Mr. G. W. Hilton, architect, at one time a member of the firm of Jones & Hilton, of Burslem and Stone, Staffs, but latterly practising on his own account at Stoke-on-Trent. He devoted much time and thought to domestic architecture, and to the problem of laying out residential areas, of which the Harpfield Estate, Hartshill, Stoke-on-Trent, is a notable example of his work.

COMPETITION NEWS.

Auckland.

SEVENTY-FOUR designs were received in the Auckland War Memorial Competition, and the three placed designs were sent in by:—

(1) Messrs. Grierson, Aimer & Draffin (Auckland, N.Z.).

(2) Messrs. R. W. McLaurin & C. G. Mitchell (Wellington, N.Z.).

(3) Messrs. E. G. Le Petit & G. E. Downer (Auckland, N.Z.).

The drawings commended for "exquisite draughtsmanship" were sent in by (No. 7) Mr. C. Bruce Dellit (Sydney, N.S.W.), (No. 67), Messrs. Vernon H. Hughes & Raymond N. Hood (New York), and (No. 69) Messrs. Massey, Morgan & Shearley (London).

In their report the assessors (Messrs. C. R. Ford, C. W. Wood, T. W. Leys, T. F. Cheeseman, and C. Nicholson) state that they realised at the outset that a building containing the accommodation demanded by the conditions could not possibly be erected for the amount stated. They could not, therefore, reject any design upon the ground that the cost of erecting the building shown therein would exceed the stated sum. They considered that the proper course was to give first place to those designs which gave the required accommodation disposed in the most economical manner, having due regard to the prime requirements in the conditions that the building should be "a noble and dignified" one and "suitable for a war memorial," and that it should also function properly as a museum. Referring to the design placed first, they say: This design will, when executed, give Auckland a most dignified memorial building of distinctive character, and will also fulfil all museum requirements. The design will require some modification, notably in the direction of gaining increased lighting to the museum portion. This can readily be obtained by the reduction of the masonry between the windows upon the sides of the galleries, which reduction can be made, in our opinion, without loss to the monumental feeling of the structure. The width of the entrance to the halls also requires increasing. It is therefore recommended that the author of No. 37 be awarded the first prize, and that he be appointed architect to carry out the work.

Proposed Hospital, Castleford.

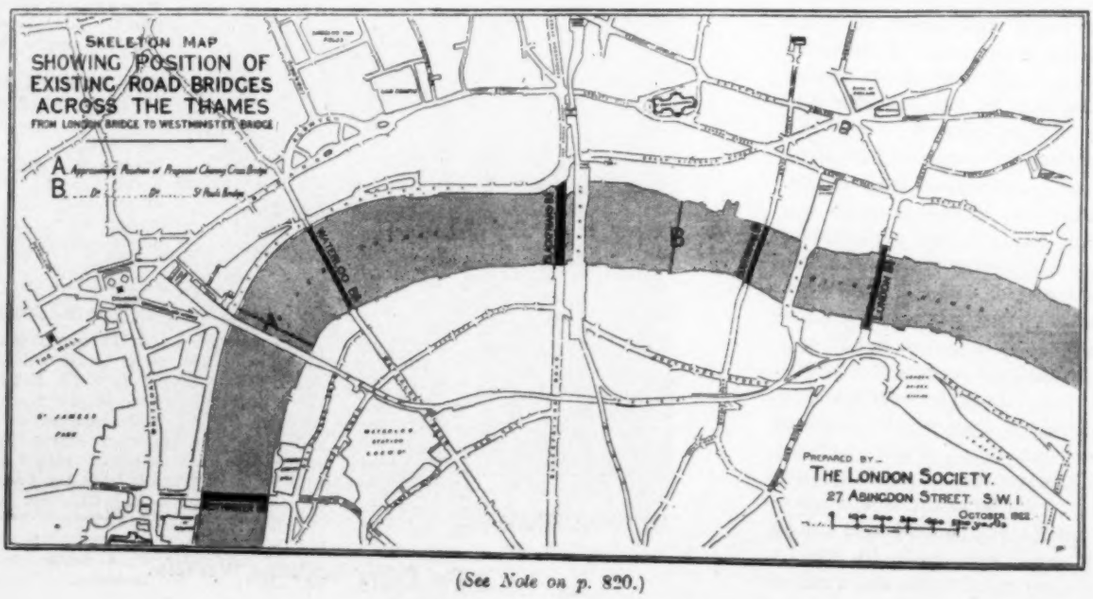
FOR CASTLEFORD HOSPITAL COMMITTEE.—Designs for a proposed hospital. (See advertisement this week.)

Dewsbury War Memorial.

FOR DEWSBURY WAR MEMORIAL COMMITTEE.—Designs for a war memorial in Crow Nest Park, Dewsbury. (See advertisement this week.)

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given): Birkenhead War Memorial (Dec. 29, Sept. 15); Port Said War Memorial (March 31, 1923, Sept. 29); Old Cranleighan Cricket Pavilion (Dec. 20, Oct. 6); Ryde Pavilion—banned by R.I.B.A. (Dec. 1, Oct. 20); Douglas lay-out—banned by R.I.B.A. and Society of Architects (Nov. 17); American Hospital (Feb. 1, 1923, Nov. 24).



(*See Note on p. 820.*)

ON Monday last a general meeting of the Architectural Association was held at No. 34, Bedford-square, W.C., under the chairmanship of Mr. Stanley Hamp (President).

The Annual Accounts: Debenture Issue.

After the minutes of the previous meeting had been passed, Mr. SYLVESTER SULLIVAN presented the audited accounts for the session 1921-2, which, he said, showed a satisfactory balance. This year the repayment had been made of £500 worth of the Debentures on the Association's premises.

New Members.

Fourteen nominations for membership were announced, and the following were elected new members:—

L. C. Powell.	L. P. Williams.
H. C. Morton.	S. A. Elijah.
H. G. Montgomery.	B. C. Sherren.
F. W. Walford.	B. H. R. Murray.
R. R. Phillips.	J. R. D'Oyly.
Miss K. M. Wallis.	C. Green.
S. E. Lester.	Miss J. Wall.
J. P. Nisbet.	S. N. Bertram.
J. J. Reynolds.	Miss L. M. Sharpley.
W. R. Brinton.	I. Forbes.
H. E. G. Browning.	F. E. Parr.
E. B. Cumine.	Miss M. L. Bennett.
N. Shiga.	H. W. Kelham.
E. S. North.	E. Freeth.
C. R. Crickmay.	R. H. W. Richardson.
J. M. Tandy.	J. V. Hamilton.
Miss N. A. Nickalls.	L. C. Varcoe.
G. R. Barnsley.	Miss M. F. Rigg.
L. L. Brown.	Miss M. L. Wilkinson.
J. H. S. Woddington.	L. N. Holt.
K. D. Sanders.	A. Vetchinsky.
E. H. Beale.	W. V. Trubshawe.

PLANNING AND FITTING A HOME.

Miss EDITH PLACE then gave an address on "Domestic Architecture," particularly in relation to the interior arrangements of a house. After outlining the development of the modern dwelling-house, she said by degrees we had arrived at the house of to-day, though Londoners were mostly victims of houses of yesterday built by people who had no idea of the difficulties which would beset housekeepers. All through the last century there had been little thought for the domestic worker, and that had much to do with the scarcity of domestic workers to-day. In any discussion of labour-saving in the home she would put first thoroughness of construction, well-fitting doors and windows, boards which did not allow dust to get between them (and which, being of good wood and truly laid, would need no covering), and wainscotting which met the floor firmly and preferably with a curve. Even the present houses would be cleaner and warmer if attention were given to those matters. Lighting was important both by day and night, and aided easy cleaning. Electricity and gas should be made far more serviceable than at present. Water supply and escape of waste should be simplified. Washing basins and sinks should all have hot and cold supplies, thus saving much chamber work. Speaking tubes saved unnecessary journeys about the house. More lavatory fittings would be useful. Referring to the question of cupboards, she said cupboards were never deep enough for clothes to be kept in the right way, but always meant a muddle. Also they should extend to the ceiling instead of leaving a space to catch dust and to hold nothing usefully. If a cupboard were large enough to stand in it should be fitted with a light if there could be no window lighting directly into it.

Many points occurred to her with regard to the kitchen. It should be well lighted both by day and night. It should not be underground. It should have a deep sink, with a plug, which could be easily cleaned and which had a good space on each side. The cooker should not be in a draught, and should have good table space near it. The table in the middle of the room was a nuisance. The dresser should be deeper, and should have glass doors; as a rule the dresser drawers were too deep to be tidy, and more shallow drawers would mean each thing in its own place. The table or shelf near the cooker might have arrangements for the materials used in cooking and for the utensils. It would be a good idea if the store cupboard were panelled with perforated zinc to allow for its being aired.

With regard to furniture, she thought there was generally a great deal too much movable furniture in the home, especially in bedrooms. If there were more fittings in the shape of cupboards, fitted lavatory basins, etc., such things as wardrobes, chests of drawers, washstands, and sometimes dressing tables could be done away with. The cupboard could have a long mirror panel, which would leave the bed, some chairs, and a table as all the movable furniture needed. Even sitting rooms could be quite as pretty with cupboard fittings, shelves with glass tops, etc. Much could be done to keep walls clean, painting being perhaps the best method.

London was full of houses which were too big for the families of to-day, and to her mind the best way was to make them into maisonnettes, which were more homely than flats, and had loftier rooms. Blocks of flats were generally dismal things.

In conclusion, she said the kitchen should never be on the south side of the house, even if it had to be in front; the kitchen window could be made as attractive as the dining-room window; the dining-room should be behind the kitchen with a door between; in a double-fronted house the drawing-room should run right through; windows should always be low enough to permit the occupants to see out of them when seated inside the room; stairs should be low pitched; and front doors might easily be recessed so that people would not have to stand in the rain.

Discussion.

A vote of thanks to the lecturer was proposed by Mrs. CHARLES PEEL, who said architects, in common with all other men, kept servants—sometimes they called the servant a wife, sometimes they called her a housekeeper, sometimes they called her a servant and paid her as such—but they all had someone to do domestic work, and if it had not been for that they would long ago have done away with the brick and mortar monsters which ate away the hearts of the women of to-day. No house could be called labour-saving unless it were properly planned and the right materials used. The house should be studied on the same "motion study" lines as the up-to-date American factory. The best arrangement was to have the dining-room and the service room (or kitchen) back to back with a slide in the connecting wall, through which food and utensils could be passed backward and forward. She thought architects might with advantage add a fresh course to their training, viz., six months' apprenticeship to a charwoman, for when they thoroughly understood the art of labour making they would be in a position to know something about labour saving!

Mr. T. LAWRENCE DALE said it had to be remembered that the brick and mortar monsters complained of were not built by present-day architects; the bulk of the population was living in out-of-date houses which ought to be scrapped. But as houses could not be scrapped people had to put up with them; modern architects, however, could not be blamed for their erection. He found that his lady clients absolutely insisted on having a kitchen and separate scullery, although he did his best to persuade them not to have them. The best solution seemed to be a kitchen-scullery combined, and a comfortable room for the servants to sit in. It was unfortunate that people always looked on houses as investments, and always had an eye to the future value of the property.

Mr. H. B. CRESWELL said the small details of kitchen arrangements, &c., mentioned were not architecture, and if his life was to be given up to such little details it would not be worth living. The houses complained of had probably never been built by architects at all.

Mr. T. S. TAIT said he thought the ideal house was one with cupboards as large as possible, and with the minimum of movable furniture, but if the client were told it would add 50 per cent. to the cost of the house he would probably find another architect.

Mr. GILBERT H. JENKINS said he reckoned the additional cost of the improvements suggested by the lecturer would increase the cost of a £3,000 house by £2,000, which would not be approved by many clients. Referring to working-class houses, he said it was extraordinary that the Ministry of Health restricted the size of the living rooms while in some areas not permitting a height of less than 9 ft.; he thought it would be far better to reduce the height to 7 ft. 6 in. and enlarge the superficial area. For heating, the coke boiler was, in his opinion, the most economical.

Mr. SYLVESTER SULLIVAN and Mr. H. CHALTON BRADSHAW also spoke.

In putting the vote of thanks to the meeting, the PRESIDENT said unfortunately the people who designed the houses which the lecturer had complained of as being difficult to work were allowed to call themselves architects, and, until there was a discriminating method of saying who was an architect and who was not, qualified architects would be blamed for unqualified men's work. He was afraid the by-laws in this country would prevent the erection of apartment houses such as they had in America.

In replying to the discussion, Miss PLACE said her remarks were not specially intended to refer to larger houses, but even if in a house with seven bedrooms her suggested improvements cost an additional £2,000 she did not think it would be too much for the benefits they would confer.

At the request of the President, Mrs. PEEL also replied. She said there was at the present time a great demand for labour-saving houses which could be run at little cost. It paid over and over again to plan labour-saving houses, for the labour-saving house was the only one in demand to-day, and was really a commercial proposition. She thought every firm of architects ought to employ a specialist in domestic efficiency.

Bournemouth War Memorial.

Bournemouth's War Memorial was unveiled recently by the Lord Lieutenant of Hampshire (Major-General J. E. B. Seely, D.S.O.). The memorial is placed in the Upper Pleasure Gardens, and is 13 ft. square at the base, and rises to a height of about 40 ft. It is surrounded by a squarely treated balustrade, with steps leading up from the garden to the inner surround. Mr. A. E. Shervey, Lic.R.I.B.A. (the Deputy Borough Architect), has acted as honorary architect. The monumental work was carried out by Mr. W. A. Hoare and the foundations by Mr. W. Hayward.

CORRESPONDENCE.

The Outlook for the Architect.

SIR,—Your article entitled "The Outlook for the Architect" touches upon such vital facts of urgent interest to the profession that perhaps a few further remarks on the subject may not be out of place. Your statement that "there is a lack of appreciation of an architect's services" sums up the difficulty under which he is working, but why is this? I suggest it is because he is generally looked upon as an artist only and almost entirely unpractical, but the public require a practical man who can produce an economical building, and as your article says a building of "sound construction and beautiful detail" and, what is more, of the highest comfort and efficiency.

Now, does the present architectural education produce an architect to suit these conditions? Surely only a negative answer can be given to this question, and until the architect gives the services that the public require the lack of appreciation you mention is bound to continue.

If it is considered impossible to combine this wide range of services in one individual, then perhaps it will be necessary for the practical and artistic man to combine. Personally I do not consider it impossible, providing he is well trained and willing to devote a large amount of his time to study and not be given to understand that after four or five years at an architectural school in which design is the chief and all-important subject he is equipped either to commence in practice or accept a responsible position, without yet having gained any business experience in an office.

I do not wish to suggest that design should not receive the precedence in an architect's training to which it is obviously due, but that the other side, which is also of equal importance, should not be neglected as now appears to be the case.

"STUDENT."

SIR,—Your leading article of Nov. 17 was very provocative, as no doubt a good leader should be. The outlook for the architect will depend whether he is an artist or whether he is a commercial man. If he is the artistic type he will have to make a choice: he will have either to take his chance as an artist and stand or fall on purely artistic achievement, or he will have to ally himself with an architect of the commercial mind, when his outlook monetarily will, of course, be brighter.

It is surely a commonplace now that in the arts the joy of creation, the work itself, forms part of the income, or rather has to be, and indeed is, a consolation for the smaller income which all artists receive, except a fortunate few.

If the artist, however, allies himself with the business man he invariably finds that he has to submit to interference with his creations, and to supply supposedly more paying designs. No artist worthy of his salt can submit to such restrictions. One sometimes wonders whether architecture really is an art at all. What would the painter say if some layman came along and altered his picture, partly repainting it with bungling hand?

The lack of appreciation of the architect is largely due to the fact that architects tamely submit to dictation, and alteration of their designs, because they dare not displease their clients.

I take you to lend support to the suggestion that architects should become members of building firms. But how will this benefit the rank-and-file? The architect would surely have to put down some capital, a thing the beginner, in nine cases out of ten, could not do. Further, this would submerge the identity of the designer still more, which earlier you inveigh against.

I do not agree that the recompense for the architect is "very small"; in fact, in many cases it is so large that his services have to be dispensed with, as in the case of speculative house-building. It may be that, as you say, the system of payment by commission on cost is a bad one, but how else can payment be relative to the size and cost of the building?

In looking at the problem of the future outlook for the architect, let us first of all, at least, put out of mind the present slump in trade. *Everybody's* future looks precarious at present.

I am quite in agreement that there is a lack of appreciation of architecture, although it is not so apparent as it was twenty years ago, owing to the prominence given to it now in our daily and weekly papers.

After all, if there is no demand for our services, the beating of drums and the blowing of trumpets will not create it. I should think many of your readers would be interested to read other architects' views on this question.

"ENTASIS."

SIR,—May I be permitted to make a few comments on the excellent leading article in your issue of November 17?

You deal with the economics of architecture as a profession as the main theme of your article, and I would plead the indulgence of your readers a little on behalf of the assistant whose claims you champion. I am afraid many in the profession are very little sensitive to the difficulties of life of those who have been materially hampered by them. The assistant is really not such a bad fellow nor such a useless fellow as he is so often described; nor is it true, as so many fairly successful architects believe, that he remains an assistant just because he is not capable of becoming a principal. At the outset of his career, at the end of his training, at the end of what should be his journeymanship, he is, weight for weight, average for average, professionally and intellectually the equal of him who at this stage becomes a principal; but all other things being equal, architectural commissions come to that man who has friends or relatives sufficiently wealthy to build, or sufficiently influential to introduce building, and ultimately those who have to shoulder the weight of responsibility must, average for average, so far excel those who have never had the opportunity to do so. Again, many of those who are crowded out from the upper rungs will, by the casual and unsatisfactory (to them) nature of their employment, gradually drop lower, until, it must be admitted, a relative few are very little use in the profession. Adverse circumstances make some men, but master most. The unfortunate assistant first postpones marriage until better days, at length contracts it because he realises the better days will never come, and makes up his mind to a lower standard of living finally intermittent employment and increasing home responsibilities compel him to accept posts at lower and lower salaries, and he is borne down through life by grinding poverty. Believe me, more than one case has come to the notice of the Executive Council of the Architects' and Surveyors' Assistants' Professional Union during these last few months where homes have had to be pawned and sold to provide the necessities of life, and one case at least where the poor unemployed assistant (and this man quite a capable draughtsman) had to seek relief from the Poor Law Guardians.

Is it a wonder that such men grow bitter, and more especially bitter against those who are at the top of the profession, and who, on the Councils of the two senior professional bodies, ought to rule the destinies of their profession impartially for all members of it? Is it a wonder that assistants form themselves together into a union to stop this state of affairs and to prevent its recurrence? Surely it is healthy that they should do so, for the less fortunate members of the profession must at least be retained as self-respecting members of it. What is the Union which they have formed? It is just an association of assistants, representative of all grades of assistancy, perhaps more especially of the higher grades, organised to further the interests of assistants and intent to secure that as an initiate in the profession he shall be guaranteed such a training as will make him a really useful member of it, that the numbers in the profession shall be so regulated as to bear some approximate relation to the amount of work likely to be forthcoming, that every man employed in the profession shall be paid a living wage (on the principle laid down in your article that the labourer is worthy of his hire), and that he shall be accorded some credit for the work he does.

In reference to this last I would make a suggestion. The Royal Academy regulations now require that architectural drawings submitted for the annual exhibition bear the signature of the draughtsman as well as of the architect, though the name of the former is not printed in the catalogue. My proposal is that *The Builder* refuse to publish reproductions of architects' drawings unless also signed or initialled by the draughtsman, which would subsequently be of use to the draughtsman when and if seeking employment.

In conclusion, may I plead, Sir, for a more human understanding of the under dog by the top dog? One often hears of "the excellent relations which exist between an architect and his assistant," but how far do those relations go? Seldom so far, I fear, but that they might go much farther, seldom so far as to wonder how the assistant's wife manages to square the housekeeping bill on her husband's miserable salary.

It has been truly said that certain political extremists would fare badly but for the existence of hungry men. This Union is not political and is certainly not extremist, but the surest way for those architects who do not like it to kill it is for them to see that every assistant is well paid and happy. Even I, the Chairman of its Executive Council, will be happy to see it expire under such conditions.

CHAS. MCLACHLAN,
Chairman Executive Council, A.S.A.P.U.

Lytham Public Hall and Baths Competition.

SIR,—In criticising the award in the above competition, Mr. Pearson admits that he has only seen illustrations of the winning design. I think he has a legitimate grievance in that he had no notice of the exhibition of drawings, but without seeing the other designs it is not fair to assail the assessor's award. I myself am a disappointed competitor in that I only secured fifth place, when I hoped for a better position; but I spent a long time in examination of all the designs submitted, and I am firmly of the opinion that Mr. Cross chose the best from a practical and sensible point of view.

True, the winner has many faults, as Mr. Pearson ably points out, but if a rigid adherence to the conditions had been enforced there would have been a difficulty in finding any winners. As an instance of this it may be remembered that a very prominent condition was that spectators of the swimming must be able to see the whole water surface of the bath. This was not an impossible, or even difficult, matter of attainment; yet, out of the 47 designs submitted only 13 absolutely complied, and some of these solved the problem by the infantile expedient of making the galleries accommodate no more than a single row of seats. I believe the three premium winners all failed at this hurdle, and, if my notes are correct, Mr. Pearson also.

It would be idle to suggest that 34 designs with blind and partially blind galleries should have been immediately rejected without further consideration. As an interested competitor I do think that some of the designs were lucky to get into the awards, but I am quite satisfied that Mr. Cross chose the best and most practical solution for the first premium. He is to be complimented upon his sound judgment, and such was the general opinion amongst visitors at the exhibition.

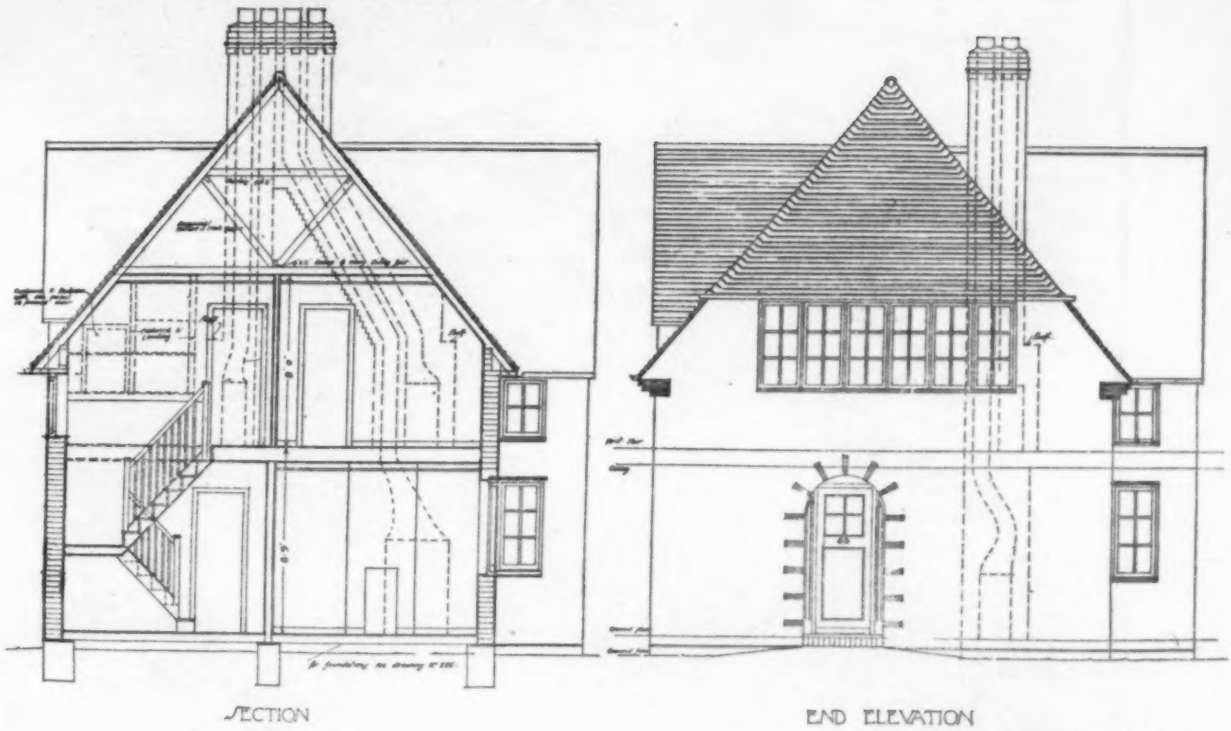
RICHARD ANDERTON, A.R.I.B.A.
Preston.

Wesleyan Central Hall.

SIR,—Some time ago I wrote you about the unfinished condition of the front of the Wesleyan Central Hall in Westminster, wondering why it had been tolerated so long. Now I see they are putting up some more stock brick work, so apparently this eyesore in the centre

EDMONTON U.D. COUNCIL:
HOUSING. TYPE B4 (ROUGH CAST).
SCALE ½" INCH TO ONE FOOT.

№ 179



SECTION

END ELEVATION

NIVEN & WIGGLESWORTH, ARCHITECTS,
BEDFORD HOUSE, W.C. DEC 1922.

FIRST FLOOR.

NORTH

SECTION

GROUND FLOOR.

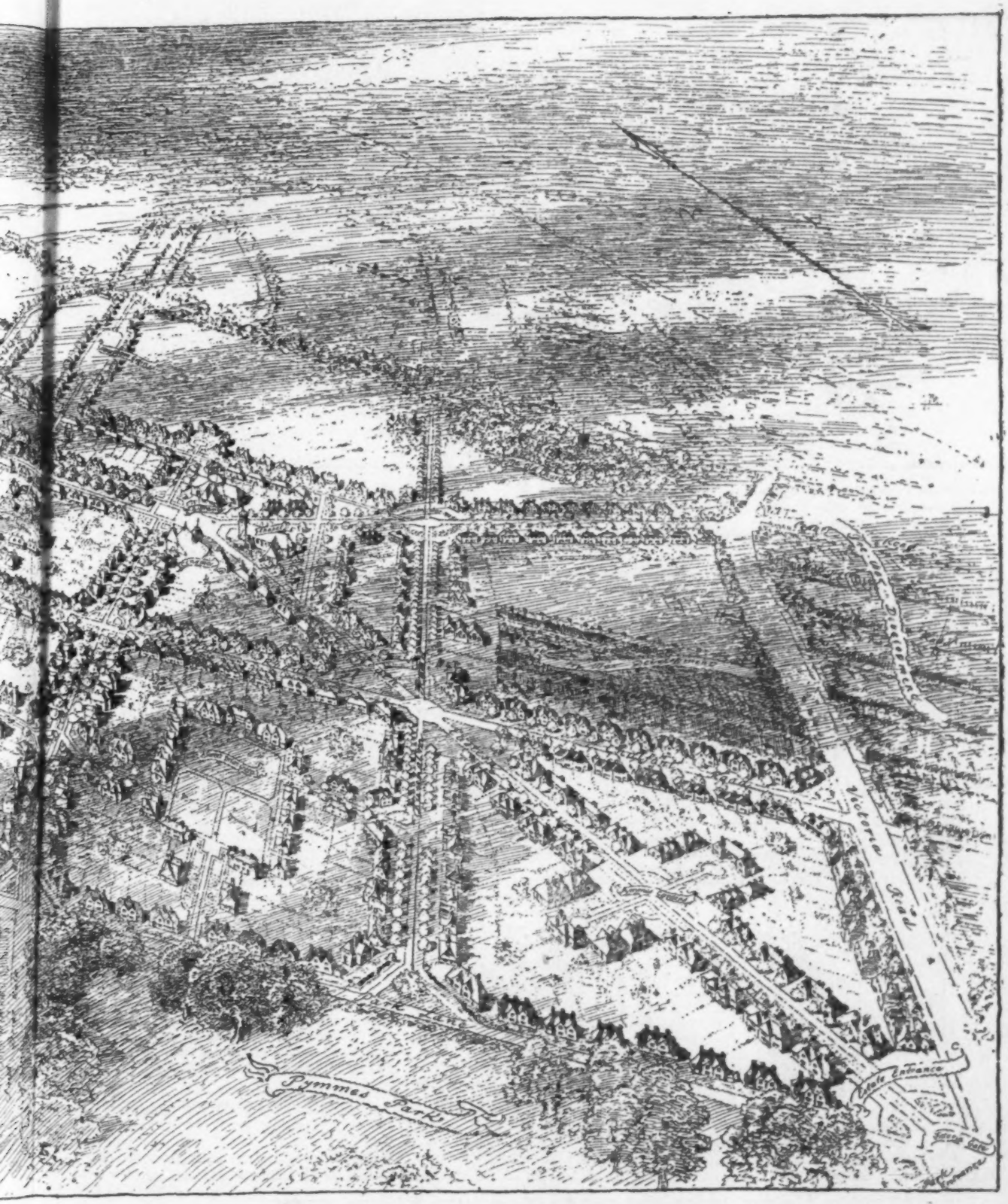
SOUTH

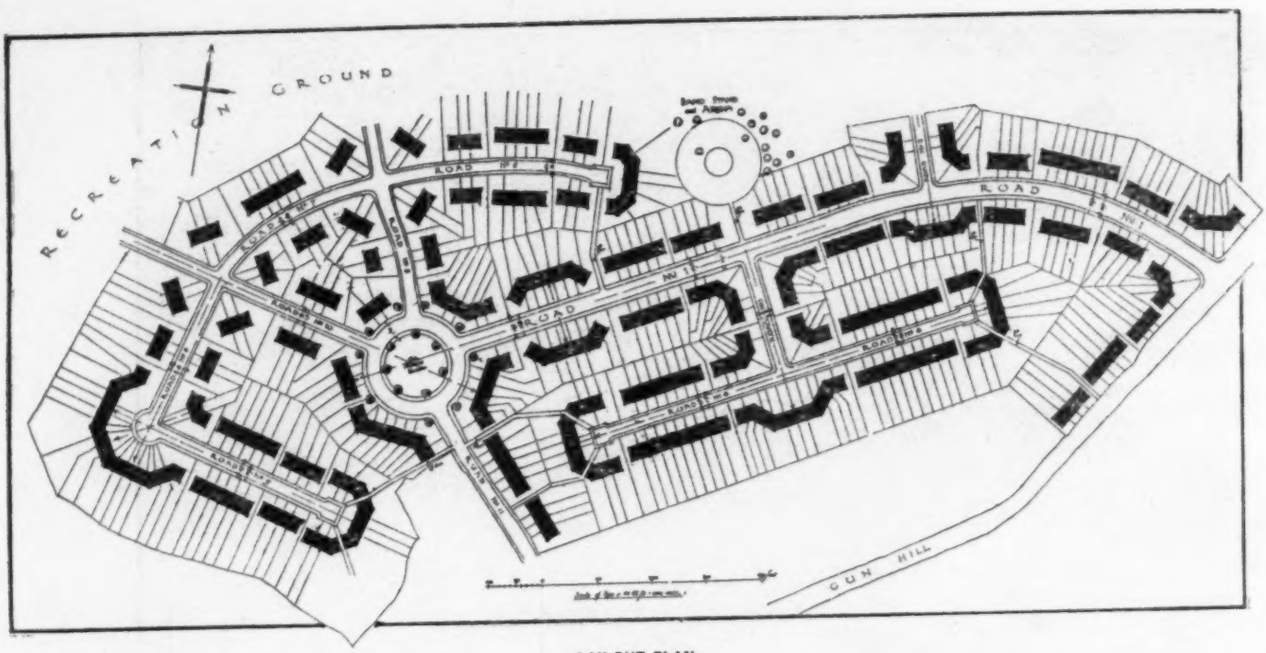
END.

TYPE B4 (ROUGH CAST).

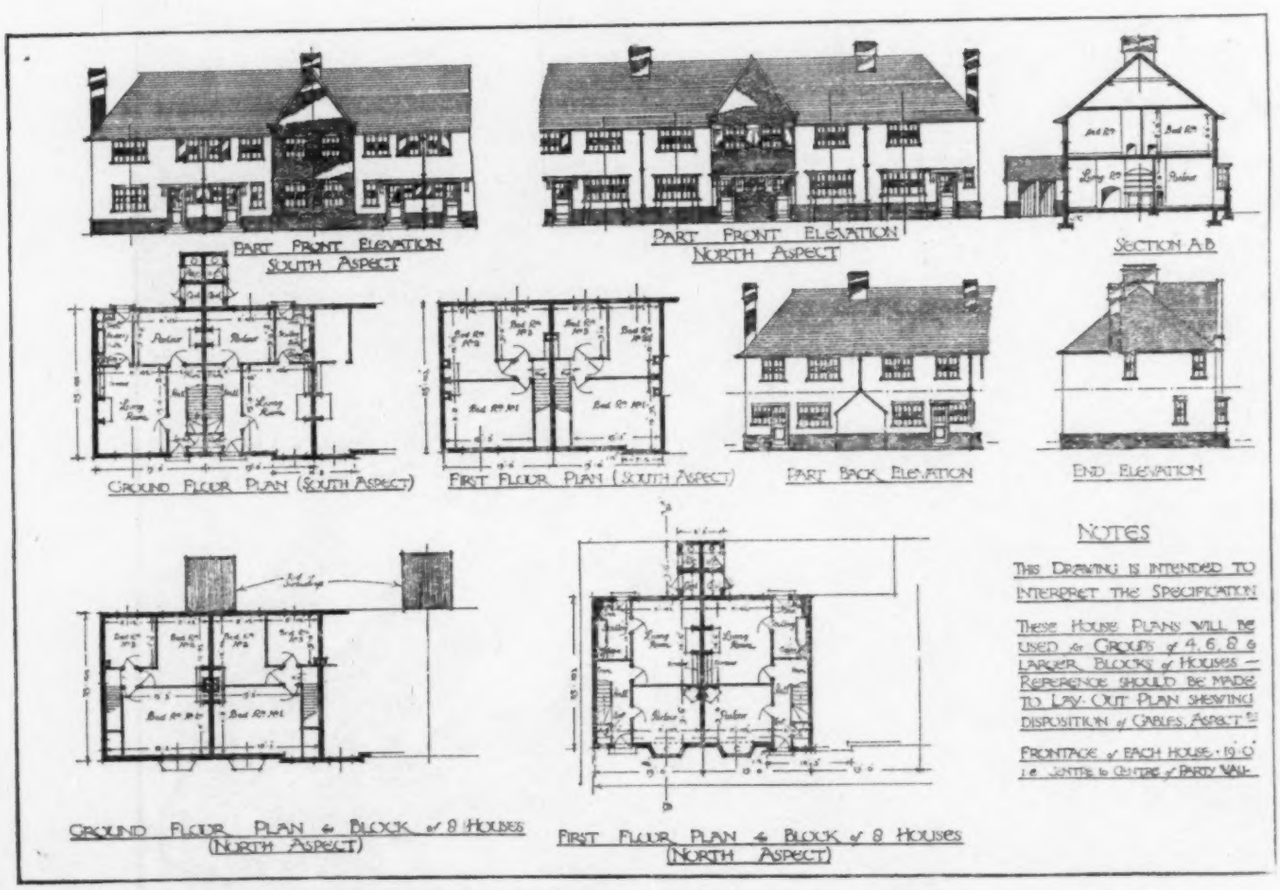
EDMONTON U.D.C. HOUSING SCHEME. MESSRS. NIVEN & WIGGLESWORTH, FF.R.I.B.A., ARCHITECTS.

Future
Development
New
Radial
Road
Cambridge
Recreation Ground
New Housing Development
EDMONTON HOUSING SCHEME
Birds Eye View of
COMPLETED LAY-OUT
Nairn & Wigglesworth, Architects


Victoria Road
Pymmes Park



LAY-OUT PLAN


PART FRONT ELEVATION SOUTH ASPECT
PART FRONT ELEVATION NORTH ASPECT
SECTION A.B.
GROUND FLOOR PLAN (SOUTH ASPECT)
FIRST FLOOR PLAN (SOUTH ASPECT)
PART BACK ELEVATION
END ELEVATION
NOTES
THIS DRAWING IS INTENDED TO INTERPRET THE SPECIFICATION
THESE HOUSE PLANS WILL BE USED in GROUPS of 4, 6, 8 & LARGER BLOCKS of HOUSES — REFERENCE SHOULD BE MADE TO LAY-OUT PLAN SHEWING DISPOSITION of CABLES, ASPECT &c
FRONTAGE of EACH HOUSE - 19'0" i.e. JUNTIES to CENTRE of PARTY WALL
GROUND FLOOR PLAN of BLOCK of 8 HOUSES (NORTH ASPECT)
FIRST FLOOR PLAN of BLOCK of 8 HOUSES (NORTH ASPECT)

HOUSING SCHEME AT ARLEY. MESSRS. DOUGLAS G. TANNER & ARTHUR L. HORSBURGH, ARCHITECTS.

of London is to continue indefinitely. It is a pity the City Council cannot intervene.

P. BENHAM.

[*** We have communicated with the architects who inform us that the incomplete state of the building is due to rights of light claimed by the Westminster Hospital in view of the special purpose of their institution. At a future date it is probable that the Hospital will remove, in which case it is intended to complete the Central Hall in accordance with the original design, which may be seen in a drawing in the R.I.B.A. exhibition opened to-day.—ED.]

The A.A. President's Address.

SIR,—I have read with some surprise the letter contributed by "Country Member" in your issue of the 24th ultimo, in which he refers to my presidential address at the Architectural Association, and the views of other speakers who joined in the discussion which followed. I would like to assure him that his interpretation of the words used on that occasion were not intended, and could never have been understood by those who followed the debate, as being in any sense derogatory to architects in particular, or the public in general, and that if he can so far misunderstand the intention of the words expressed, it is unfortunate, but in no sense justifiable. How any ideals, whether they be of young or old, can be thought to be ungentlemanly, I am at a loss to understand. Every member, very properly, has a right to his own opinion, but it is sometimes comforting to reflect that although these may be expressed in the form of a letter in the public press, under a *nom-de-plume*, its value will be taken upon the merits of the arguments used. I need add nothing further, as this letter in particular speaks for itself.

Interested as I am in Mr. Maurice Webb's reference to American architects' methods in trying to solve their housing problem, it would be much more elucidatory to have had from "Country Member" more detailed particulars with regard to his own work referred to, where he states that he is, in fact, now "doing cottages" for which he will receive less than £6 per cottage, which sum includes travelling and other expenses. I would like to know what he means by "doing cottages." If he means designing, obtaining estimates, superintending, checking accounts—all work which the practising architect has to perform—then it means either: (*a*) repetition of one or two designs only, for a large number to be erected; or (*b*) he will be out of pocket on the completion of the work.

Now, Mr. Webb's suggestion is made with a view to preventing either of these things happening, as, in the first instance, it would be bad for the architecture of the country and, in the second instance, a poor result for the architect employed. I am sure Mr. Webb would be quite willing to show this writer how he could obtain a more satisfactory result for his labour, upon lines which would not be undignified to his professional standing, or to his clients' disadvantage.

I think it is becoming recognised in the architectural profession that an effort must be made to meet the housing difficulty in the country by some concerted action to reduce, as far as practicable, the costs necessary in the erection of dwellings.

STANLEY HAMP.
(President. The Architectural Association.)
London.

SIR,—Your nameless correspondent, "Country Member," has taken a somewhat unfair advantage in publicly parading the fact that those of us who attended a certain A.A. dinner are not gentlemen. In accusing the President of advocating ideals "not those of an English gentleman," he accuses everyone who was present (ladies excepted); for the whole meeting appeared to be in agreement with the spirit of the President's remarks. While an exact definition of our status is, no doubt, of interest to the sociologist, it is more important, for the moment, to ascertain whether or no we were talking sense.

I understood the President to say, in effect, that since England, during the last century, has been converted into a museum of ugliness and deformity, it is time someone put it right; and he expressed the opinion that architects were the people to do it, if necessary at personal sacrifice. One might add that, if architects don't do it no one else either can or will.

Why are these sentiments unaristocratic?

"Country Member" is, we learn from his last paragraph, a man of "generous" and "not ungentlemanly instincts"; why, therefore, is he so anxious to find out how to get £30 commission per cottage, when he must be aware that the services involved are not worth £30?

MANNING ROBERTSON.

Architects as Mayors.

SIR,—In your issue for November 17 (page 727) you mention the names of architects who have filled the office of Mayor, but the name of my esteemed friend, the late Horace Porter, M.A., F.R.I.B.A., who succeeded me as Mayor of the Metropolitan Borough of Holborn, is omitted. Will you kindly insert this, so that he may not be forgotten. MAX CLARKE.

"Signing of Buildings."

SIR,—It may interest some of your readers to learn that Belgrave-square is "signed" by the architect on the south side of the square. The name "George Basevi, Architect, 1827" is incised in the stucco and appears on the architrave at the East side of the portico of No. 31. S. TAED. PUZEY.

The Housing Problem.

SIR,—You are quite correct in assuming that the means of solving this problem are of as much interest to me as the end to be obtained; the pity is that others are not equally alive to their importance. To idealists it may appear a trivial matter whether builders are financed by private capitalists, banks, or out of the public funds; but to the practical man and the ratepayers it is a matter of the very first importance.

Meanwhile, you omit to mention the name and date of the publication in which you read the letter which suggested the erroneous idea that speculating builders refused to build whilst criticising the efforts of others.

B. A. N. KEMP.

[We repeat that speculative houses are produced by speculative builders whether they finance themselves or are financed by building speculators. The question of public funds is now brought in by our correspondent. Our attitude towards subsidies and the taxpayer has been clearly expressed in our columns from week to week. We have kept no record of dates, and we can only state again that from February to May many letters under the signature of "A Speculative Builder" were published.—ED.]

Bungalow v. Cottage.

SIR,—It seems a pity that Mr. H. A. Glenn's calculations should not rest upon surer ground than Mr. Nesbitt Kemp's illustrated exposition in the above controversy, which is rather in the nature of special pleading and cannot be accepted as of general application. His bungalow, too, is passable, but his "cottage" is horrid.

With accommodation up to four rooms it is probable that a bungalow has some slight advantage in "cubecal contents" (*sic*). Even so, both cube and brick outside walls might be greatly reduced in the two-story erection by some attempt at planning, and as the number of rooms increases the proportions of advantage soon reverse.

There is sound sense in Mr. Bissley's letter, though I have understood that it was less "Bill Sikes" who was feared than the petty pilferer and the marauding cat, on whose account it is found necessary (at any rate in the suburbs) to observe great care in the regulation of the windows of bungalow bedrooms, especially when the place is temporarily left on, say, a shopping expedition.

Ruislip. EDWARD GUNN.

Curing Smoky Chimneys.

SIR,—Could brother-architects give their experience in dealing with the old-fashioned fireplaces generally found in the Elizabethan buildings? There is at the present time an affection on the part of clients for preserving the wide and open hearth and to burn logs upon same in the old style, but one is met with down draught which makes living in the rooms often impossible, especially when the winds are in certain directions. I know one can resort to plate-glass screens, but is there nothing more effective without adopting glass screens, which look very modern and spoil effect?

Hereford. M. S. A.

Other Letters.

A letter on the proposed Charing Cross Bridge is given on p. 838.

THE ARCHITECTS' AND SURVEYORS'ASSISTANTS' PROFESSIONAL UNION.

THE annual dance of the A.S.A.P.U. was held at Australia House recently, when some 200 dancers took part from 7.30 to midnight, to music provided by the Gigg's Syncopated Orchestra. The scene was made more effective by "Arabs" and "Italians" who had ventured forth in native costume, while a pleasing feature was the exhibition of toe and costume dancing by Miss Vera Estick. Amongst those present were Messrs. E. J. Sadgrove, F.R.I.B.A., President, and C. McArthur Butler, Secretary, Society of Architects; Mr. F. R. Yerbury, Secretary, Architectural Association; Captain Kiddy, Secretary, Concrete Institute; Messrs. J. M. Mitchell, General Secretary, A.S.A.P.U.; J. Strachan, General Treasurer, J. A. Gould, Hon. Secretary, Metropolitan Branch, and C. McLachlan, Chairman, Executive Council. The arrangements were in every way good, and the Committee, Messrs. Cathrow, Wheble, Rhind, Williams, and the M.C., Mr. A. P. Althorp, are to be congratulated on the success which crowned their efforts. Photographs were taken, proofs of which can be had on application to Mr. J. A. Gould, 36, Victoria-street, S.W.1.

Memorial, All Souls' Church, Ascot.
MR. CHARLES PIBWORTH, R.B.S., Sculptor.

WHITGIFT HOSPITAL, CROYDON.

We have received the following communication from the Royal Institute of British Architects: –

Among the buildings of historic and artistic interest possessed by Croydon, one of the most notable is the Whitgift Hospital, which occupies a prominent position in North End. Queen Elizabeth, during her reign, appears to have paid several visits to Archbishop Whitgift, whose palace was situated in Croydon; and what is now known as Whitgift Hospital was built by that ecclesiastic towards the end of his life for the benefit of poor and aged people of Lambeth and the town. The date of its construction is 1599. The buildings are two stories high, and occupy the four sides of a quadrangle. They include quarters for 50 people, a chapel, great hall, and other interesting features.

While it has been somewhat tampered with in restorations that have taken place from time to time, it remains a generally complete example of an Elizabethan building, very expressive of its purpose and of considerable charm. The value to Croydon of having a building of such interest and beauty as this, situated in a prominent position in the town and drawing the attention of countless people to the historic importance of Croydon and its part in the life of the Elizabethan period, is very considerable, and there can be no question that such a building has a distinctive value extending far beyond the limits of the town in which it is situated.

It appears that for a long time a considerable section of townsmen (as represented by certain of its Borough Councillors) has desired the sweeping away, or at least the partial demolition, of Whitgift Hospital. So strong has been the desire that there has been a deliberate setting-back of relatively new buildings in George-street, adjacent to the Hospital, in order to make it appear that the old building was an obstruction projecting beyond the general line of the road. A similar position has been deliberately created in recent years on the return front in North End, where, instead of the line of Whitgift Hospital being adopted as the new improvement line for frontages of the adjacent reconstructed premises, their main wall has been set back several feet, with the obvious desire to bring about a similar situation in North End to that which now obtains in George-street. There does not seem the slightest excuse for the action so taken, except as a means of creating a situation that might assist the desire of those who wish the Hospital to be destroyed, for it is clear that the sweeping away of Whitgift Hospital is not in any way necessary to effect the road improvements that the circumstances require.

During the last twenty or twenty-five years there has existed in Croydon the Whitgift Preservation Committee who have vigorously opposed interference with the old buildings, and who, between the years 1909 and 1912, successfully set aside the Croydon Council's destruction scheme and, with the valuable assistance of the Local Government Board—which showed very splendid public spirit in the matter—induced the Council to adopt the Defence Committee's scheme, *i.e.*, for the setting-back of the "bulge" in the line of road that occurs on the western side of North End, opposite the Hospital, together with other frontage improvements calculated effectively to assist traffic difficulties and which, apart from its obvious merits as a road improvement scheme, avoided interference with the Whitgift building.

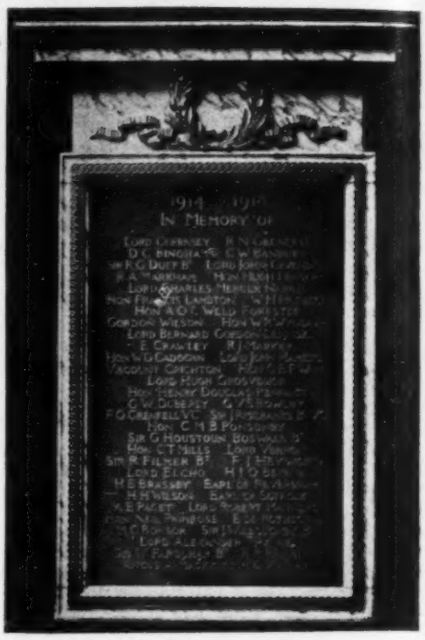
On the basis of this scheme, formally adopted by the Croydon Council in 1912 and approved by the then Local Government Board, grants of money have been made, and it would naturally be assumed that the Council were in honour bound to carry it into execution as opportunities presented themselves. Recently, however, there have been indications of a deliberate attempt to set the approved scheme aside and to revert to the old purpose of lopping off the Hospital in order to spare modern buildings, devoid of any interest at all, that exist west of it on the opposite side of the road. It is known, in fact, that the Croydon Council is promoting a Bill in Parliament to obtain powers for sweeping away the Whitgift building. It is felt that anything more short-sighted in the interests of what really matters in the town of Croydon can hardly be imagined, and the action contemplated seems to be without a shadow of excuse. An inspection of the conditions on the site or of a plan of the road makes it obvious to anyone competent to judge the situation that the scheme proposed by the Preservation Committee, and eventually adopted by the Croydon Council and approved by the Local Government Board in 1912, as already mentioned, represents from every point of view the obvious way of dealing with the traffic conditions in the part of the main road in question, and, moreover, assists the problem that arises from the restricted condition of Crown Hill—the branch road that enters the highway at this point.

On hearing of the course now proposed to be taken by the Croydon Council, the Royal Institute of British Architects took immediate action, and on its initiative a conference has taken place on the question, at which the whole situation was carefully reviewed by representatives of the Royal Institute, the Whitgift Hospital Preservation Committee, the Society for the Protection of Ancient Buildings, the Town-Planning Institute, the London Society, the Town-Planning Committee of the R.I.B.A., the National Trust, the London Survey Committee, and the Surrey Archæological Society. As a result all these bodies are not only agreed as to the local and national importance of preserving Whitgift Hospital, as a valuable relic of Elizabethan architecture, but have decided to support the 1912 scheme as providing a practical and effective road improvement which meets traffic requirements without the necessity for any interference with the Hospital. They have resolved, moreover, to take further steps to emphasise the importance of this view in quarters where it may receive due weight, and hope that the very valuable principle of avoiding, wherever possible, interference with historic and beautiful buildings may be increasingly supported by public opinion.

Monument to Francis de Murrieta.

Erected at Hamstead Marshall, near Newbury, by the late Mrs. Bradley Martin and Cornelia, Countess of Craven.

MR. CHARLES PIBWORTH, R.B.S., Designer and Sculptor.



War Memorial erected in the Turf Club, Piccadilly.

MR. CHARLES PIBWORTH, R.B.S., Designer and Sculptor.

R.I.B.A. EXAMINATIONS.

R.I.B.A. Examinations have been held in Cape Town, Melbourne, and Sydney.

Cape Town.

Of the five candidates who were admitted to the Special War Examination, four passed and one was relegated. The successful candidates are:—E. G. Hart (Cape Town), T. W. Milligan (Cape Town), C. W. B. Stocks (East London), A. A. Tait (Grahamstown).

The following candidate passed the Special Overseas Examination:—J. G. Wilson (Pretoria).

Melbourne.

Of the nine candidates who were admitted to the Special War Examination, five passed and four were relegated. The successful candidates are:—W. H. Eales (St. Kilda), M. Finlayson (Heidelburg), W. A. Henderson (Melbourne), M. W. Martin (Melbourne), P. S. Williams (Melbourne).

Sydney.

Of the eleven candidates who were admitted to the Special War Examination, three passed and eight were relegated. The successful candidates are:—J. C. R. Mills (Sydney), H. E. Phillips (Hastings), L. B. Phillips (Burwood).

The following candidate passed the Intermediate Examination:—F. L. Hodgson (North Sydney).

MANCHESTER SOCIETY OF ARCHITECTS.

ENGLISH ARCHITECTURE.

AT a meeting of the Manchester Society of Architects on Wednesday last week, Major H. C. Corlette read a paper on "English Architecture." He said that in studying the designing or "devysing" of old or modern buildings they looked for something that lived, and was creative, not for anything that was a revival of dead objects, a thing for dry criticism or dissection and dull catalogues. That must mean that, whether architects or not, they should go to old buildings and seek to know how and why they were made by practical men. And that they should do, not to copy them, not to revive or restore the past, but to discover what their hidden secrets were. If they did that they would themselves be learning how to design, create, construct, new works for their present and future needs.

Architecture was a "something" in buildings when they considered them as a whole and not in their parts alone. It involved both the plan, or arrangement for accommodation, and the external appearance of any work, as a whole, a completed unit, together with the many parts that all combined and made that whole. It also involved, perhaps more than anything else, the consideration of the materials used, the methods of construction employed and the climate of the country in which the building was found. Those were the elementary utilities out of which it was made and without which it could not exist. They were the rugged raw materials upon which mind must operate before building commenced and before architecture began to be released from its tomb of unhewn rocks; or before the product of the furnace and the kilns was clothed or shaped by another fire of energy controlled by mind and marshalled by imagination into things of form that were a new creation. If they approached old buildings in that way they could read thoughts in them. Whether they be large or small, of simple or complex form, they would find always something they could teach that would make them better equipped to do good work which a future generation might think was worthy of preservation.

In speaking of English architecture it was his desire to dwell more particularly on the work of that period which began in the early years of the sixteenth century and continued till about the time of the Civil War. They might call it, for convenience, the Elizabethan age. They had seen the confusion bred by Italian revivals, Greek revivals, Gothic revivals, and they were all probably agreed that no revival that would mean an effort to reproduce the works of the past had any interest for them to-day. But it might be that they could still discover fresh ideas in those old forms of thought that would help them and find new ways of solving questions which they were meeting every day. Much of the failure that had followed those revivals could be traced to false principles which had apparently governed those who advocated and took an active part in causing them.

One thing seemed to have been a common fault of procedure in all those different attempts to change or return to the course of tradition, or to return from a state of affairs in which all real sense of tradition had been lost. Men studied parts of buildings in detail and forgot to regard their form as a completed whole. And surely there could be little doubt that it was form in the mass and whole conception that called first for attention if they would know anything of architecture past, present or future. Detail and decoration, fragments of buildings were not architecture. Other reasons helped to cause failure in those revivals. In one case an attempt to introduce into northern climates methods of building and design suitable in southern climes and developed to be used where there was much sun and little rain. Or the architectural thought of a Greek or a Latin race was imposed on a Gothic people.

The Gothic revival in England was a national revolt against a condition of things which found them without a national tradition. It was an effort to retrace their steps so far only as to find again, if they could, the ends of some lost threads of a native tradition, one that was a natural root in a national soil. It was the Gothic mind trying to find its lost bearings; a national desire for the recovery of a dissipated heritage. If they considered Gothic conceptions in architecture they would find that they possessed much the same sense of unity in design as the Greek builders expressed so well. In their essential nature both those traditional schools followed like principles. These principles showed that structure was the necessary element by which form could be, and should be, developed. And all changes of essential form were to be derived from structural needs. In fact, the plan, with the use for which a building was made, was the foundation out of which all real building tradition and architectural design arose. Climate allowed, or demanded, certain forms; materials dictated some methods. But those all met together and were combined in one. And it was the functional office, the structural nature, worked out as a building problem, in every subordinate part, that provided new ideas, suggested differences of form, and gave architectural importance and interest to the finished work.

That practical basis made all good architecture reasonable. It gave impetus to thought. It made the creative aspect of the art rest on common sense, while it was contriving to make each useful thing a piece of beauty in a beautiful total conception. Their creative effort must begin with things, not abstract ideas alone. So they came back to fact and found that necessity in building was the mother of invention in architecture. That was how the Greeks, within their limits, were architectural inventors. And it was by that same means, using new method, that the Gothic builders became such architectural creators.

There were few things so remarkable in the history of the arts as the apparent ease, the entire freedom, with which the Gothic builders turned from one kind of work to another. And when they moved from one problem to the next they did so with their characteristic energy of action and of thought. They approached their task without fear and attacked it without misgivings. For every new enterprise they were ready with fresh ideas. And in building they seldom, if ever, said the same thing twice over in the same way. They took things as they came, handled them and left them, and passed on to the next, never looking backward but always forward to see what might be coming. They lived architecturally, not in the past but in the present, doing what it demanded, not waiting but moving on to meet the future.

They saw that in their parish churches and in their vast cathedrals. Differences in the materials available caused a change in details of structure or in colour. Differences in construction gave varieties of outline; differences in plan gave them variations of form and altered the disposition of their masses. Ornament was used where it might be appropriate. If they examined the old cottages of the period, the comparatively few that remained, or the houses both large and small of which there were many in all parts of England, it was still possible to see what the Gothic mind, working through English tradition, could do when it was turned away from ecclesiastical to secular building during nearly two centuries. The plan of any one of them would in all cases be full of interest for many reasons. In some directions the economic or domestic restrictions or needs of planning had been the cause of altered forms in their buildings to-day. But if they retained now any of the fertility of resource and invention of their architectural ancestors those were only changes that brought with them an added interest and new opportunities for design to use. There could be little doubt that in England those powers that were required still remained. In many ways that had been proved to be true in the domestic architecture of recent years. The old cottages were such masterpieces that they saw no apparent effort. And yet it was that very absence of effort in their appearance that proved the skill that made them be so fine. They were the very essence of fine art, tersely put, compressed, condensed, in every line of their rhythm, not saying too much nor yet too little, always speaking to the point and never wandering from the subject with which they had to deal. The mistakes they made in making them were nearly always over statement, prolixity of thought, confusion of idea, and ungrammatical expression. They allowed themselves to be led away from the aim and object they proposed, and they ended too often by producing something that was neither a respectable cottage nor a modest house.

In conclusion, Major Corlette said English tradition was a real living thing. By it English architecture was made a compelling, living force, and by that tradition, and it alone, could they revive that architecture again to-day and make it as vital as before. Were there not many signs that that was being done?

Abbot Snow. One of Four Life-size Stone Figures on the Exterior of the Abbey Gate House, Bristol.

MR. CHARLES PIBWORTH, R.B.S., Designer and Sculptor.

THE ARCHITECT AS SCHOOLMASTER.

By "A Plain Man."

The important question of architectural education has of late become acutely controversial. Clouds of "hot air" (to borrow an elegant term in common use), blown from the mouths of the wilder men among the schoolmasters, obscure the really vital matter, which is the well being of the unfortunate student. If there be any virtue in violent argument, we live in healthy times indeed. But when one gets down to the root of the matter, there is very little new in all this noise. "The Theory of Architectural Composition" is only what was known as "Design" a few years ago, and "The Technique of Architectural Presentation" is only a clumsy perversion of "Drawing." An "*esquisse-esquisse*" is what Englishmen call "a preliminary sketch," and a "*sous-patron*," though, perhaps, it is cruel to say so, is no more than an assistant teacher. All this absurd affectation represents the crude jargon of a few extremists, whose object, we have heard it stated, is to attain distinction by disowning their own language as well as everything else stable and tried. But (with its atmosphere of smocks and other accessories of the *atelier*, so called) it will soon pass, and we may ignore such trivial aspects in attempting to find what lies behind it all. There is no doubt that architectural education has changed enormously during the last few years. Has it changed for the better? Is it an improvement on the previous system of pupilage?

In answering these questions, the personality of the architect-schoolmaster appears of primary importance, for he is changing with the schools. Not long ago he was generally an architect in private practice, who gave a certain amount of his time to more or less un-academic lecturing and studio-work, or an assistant who turned an honest penny after office hours by guiding the hands of evening students. But he was almost invariably a member of the Institute who had obtained his diploma by the gate of public examination. The back-door method was not yet in full working order, and such Fellows of the R.I.B.A. as had attained that dizzy eminence by the older form of short-circuit were not the sort of fellows to tread the path of academic penury. It therefore followed that most of the teachers in the old-fashioned schools were modest enthusiasts who taught what they knew as their fancy dictated, and much of their work was extraordinarily good. The era of spoon-feeding had not yet dawned, but architecture as it was presented to the young idea was a real and living thing, not simply a matter of rendering and theory. The men who taught may not have been great theorists, they certainly did not affect the grandiose vocabulary of to-day, but they were at least architects, preaching what they practised. And the Institue has probably realised the value of some such link between art and life when it has insisted that professors and teachers in our great new schools of architecture shall be allowed to carry on private practice at the same time as their scholastic work. It has been seriously suggested of late, however, that the day of the "amateur" schoolmaster is over, that only those who have passed through the reputedly fine mesh of a University degree course should be permitted to teach architecture in any school of sound learning.

There is something to be said, at first sight, for this point of view. Teaching must be efficient in these hard days, when the struggle for existence is more severe than ever before. A student on leaving his school or place of pupilage is immediately in deadly rivalry with crowds of others all highly trained, unless, of course, his circumstances render him independent of such sordid considerations as bread and butter. But the acid test of architectural education is the all-round ability of the student, and in actual life that means his ability to assist another architect in practice, or to carry out buildings on his own account if he is so fortunate as to receive early commissions from admiring friends. It is constantly said that modern architectural education, with its wealth of French phrases, is not intended to fit a youth to be an assistant or to earn his living. It is supposed to inspire him with loftier ideals of a nature that is not too strictly defined. But if it renders him less able than the product of the pupilage system to earn his own living, then it is a failure, for the majority of students must become assistants or practising architects at the end of their training. In my view, that failure will only come about when the architect-schoolmaster ceases to be in touch with the realities of life, and the first reality of all is bread and butter. I have heard of an actual instance where a school prodigy entered the office of a well-known R.A., and was instructed to prepare a half-inch detail of a certain building from his master's sketches. When the great man came round to the new assistant's drawing-board, he was told that in his (the tyro's) opinion the grouping of the façade was defective! The natural result was "the sack," prompt and unsparing. Unfortunately for the schools, there is a tendency—altogether unjust—to regard too many of their students as being of the same type, whereas I believe them to be few. But the sanity of the more vociferously inclined of the teachers must be assured, or there may be bad times ahead for their students. And, above all, the Institute must stick to its guns in this matter. A sharp eye must be kept on all *curricula* and examination papers, and the External Examiners must combine the acumen of Sherlock Holmes with the wisdom of Solomon. Too often the External Examiner can be so dazzled by a wealth of fine drawing (to which the skilful hand of a *sous-patron* may have contributed many touches), that he forgets altogether to ask for any evidence of practical all-round training. Now that the schools are "recognised" officially, their candidates, who are excused from parts of the very stiff R.I.B.A. examinations, must be tested fairly and thoroughly by outsiders in common justice to other candidates who have to go through the needle's eye of public examination.

I do not wish to see a return to the old system of pupilage, for though in certain cases it was the best education of all, and though it has produced every great architect in this country so far, it was liable to abuse in the hands of men who were ignorant or lazy or unscrupulous. During his articles, a pupil was daily in touch with actual architecture, and if he had to do his reading and sketching out of office hours, he probably benefited more thereby than from a course of intensive spoon-feeding. But the modern schools, splendidly equipped with libraries and museums, can give him a more thorough training in all branches of his work, and, above all, in academic design and draughtsmanship, if only they will realise that architecture is glorified building, not glorified draughtsmanship.

"Ye Olde Kings Arms," Eltham: The Refreshment Room.
Messrs. Will Kidd & F. Selby, Architects. (*See p.* 829.)

THE WREN CENTENARY.

The following representatives have been appointed by the various bodies to serve on the Grand Committee for the bi-centenary celebration of the death of Sir Christopher Wren: Canon S. A. Alexander (representing the Dean and Chapter of St. Paul's Cathedral); Mr. Edgar Armitage (Junior Art Workers' Guild); Mr. F. Cavendish Bentinck (British Museum); Major-Gen. W. D. Bird (Royal Hospital, Chelsea); Mr. F. G. D. Drewitt (Royal College of Physicians); Sir Lionel Earle (H.M. Office of Works); Sir Banister Fletcher (Carpenters' Company); Mr. H. D. Funnell (Architects' and Surveyors' Assistants' Professional Union); Mr. J. Good (National Federation of Building Trades' Employers) Mr. A. Gray (University of Cambridge); Mr. Josiah Gunton (Corporation of London); Sir W. Hale-White (Royal Society of Medicine); Mr. Stanley Hamp (Architectural Association); Professor Selwyn Image (Church Crafts' League); Sir T. G. Jackson, R.A. (Wadham College, Oxford); Mr. H. V. Lanchester (Town-Planning Institute); Professor W. R. Lethaby (Society for the Protection of Ancient Buildings); Mr. J. M. Levien (Royal Philharmonic Society); Dr. E. H. Minns (Pembroke College, Cambridge); Mr. J. Murrey (National Federation of Building Trades' Operatives); Mr. E. J. Partridge (Society of Architects); Dr. F. W. Pember (All Souls' College, University of Oxford); Mr. J. Wells (Wadham College, University of Oxford); Sir Hercules Read (Society of Antiquaries); Major R. Rigg (London and Middlesex Archæological Society); Mr. W. E. Riley (Official Architects' Association); Professor Sir A. Schuster (University of London); Sir C. H. Smith (British Institute of Industrial Art); Mr. J. C. Squire (Architecture Club); Mr. L. E. Tanner (Westminster School); Mr. A. T. Taylor (London County Council); Mr. Carmichael Thomas (London Society); Dr. H. H. Turner (Royal Society); Mr. L. A. Turner (Art Workers' Guild); Mr. F. J. Walton (London Master Builders' Association); Mr. E. P. Warren (Civic Arts' Association); Sir Aston Webb, P.R.A. (Royal Academy); and Mr. S. M. Young (Company of Masons).

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ILLUSTRATIONS.

Edmonton Housing Scheme.

We reproduce illustrations of the Edmonton housing scheme, of which Messrs. Niven & Wigglesworth, FF.R.I.B.A., are the architects. The scheme was originally laid out for 1,765 houses, but owing to the Government's change in policy only 232 were carried out. The site is on the north side of Pymme's Park.

At the time the houses were designed brick building was very expensive, and in consequence the walls were kept generally to the ground floor, the bedroom accommodation being largely in the roof. Later, as brick building became less costly new types of houses were proposed with the brickwork going up to two floors, with a roof o simpler type. In addition, a still further series of plans was made with experimental flat roofs to facilitate straightforward constrution, but little could be done in this direction owing to the termination of the scheme through Government action.

The contractors, Messrs. Baldry, Yerburgh & Hutchinson, Ltd., Queen Anne's Gate, Westminster, had undertaken to build at the rate of one house per day—500 houses in 500 days—and the chart which was prepared and closely followed showed a steadily increasing number of men and consequent output until just before the coal strike in March, 1921, when a house per day was being completed. Mr. Cuthbert Brown, Engineer to the Edmonton Urban District Council, was closely associated with the architect in the work.

"Ye Olde Kings Arms."

Owing to a London County Council road improvement scheme the existing "Old Kings Arms," High-street, Eltham, has to be demolished, and the owners, the Dartford Brewery Company, consulted Mr. Will Kidd, of 21, Elm Park Mansions, Chelsea, upon the design of their new premises, which had to be erected on a restricted site directly behind the existing house. Mr. Kidd, who was the architect of the winning design in the recent competition for this class of public house, instituted by Messrs. Samuel Allsopp & Sons, and illustrated in this journal, July 23, 1920, developed the plan on "Ideal Public House" lines.

The new building has been designed by Mr. Kidd in conjunction with Mr. F. Selby, of 44, Chancery-lane, W.C. The elevation to the High-street is carried out in

"Ye O'de Kings Arms," Eltham; The Sign.
MESSRS. WILL KIDD & F. SELBY, Architects

multi-coloured bricks and Portland stone with a hipped roof covered with pantiles and eaves of sand-faced tiles, the entrance doors and framing of dormer windows in oak, the casements in steel direct to stonework.

The public rooms comprise a refreshment room, bar, and club room; the clock and basket grate were taken from the existing house and embodied in the decoration of the club room.

The rooms are panelled in oak stained a dark brown with plasterwork above distempered a rich cream, the floors being a jointless composition of dark maple colour. The fireplaces and hearths are in silver grey two-inch bricks. A feature of the design is the central lock-up service bar which enables the house to be kept open during prohibited hours for the sale of non-intoxicants and refreshments.

The contractor is Mr. J. W. Ellingham, of Dartford. The electric lighting and heating was by Messrs. Comyn Ching & Co., Ltd.; the floors by Messrs. E. G. Walters & Co.; bar fittings by Messrs. Gaskell & Chambers; and steel casements, door furniture, &c., by Messrs. James Gibbons, Ltd.

MEETINGS.

TUESDAY, *December* 5.

Institution of Heating and Ventilating Engineers.—Mr. C. G. Huntley on "Ozone in Ventilation." At 38, Victoria-street, S.W. 1. 2.30 p.m.

Architectural Association.—Annual Conversazione. At 35, Bedford-square, 8 p.m.

University College.—Mr. Arthur J. Davis, F.R.I.B.A., on "The Principles of Architectural Planning." 5.15 p.m.

WEDNESDAY, *December* 6.

St. Paul's Ecclesiological Society.—Rev. A Shirley on "The Ruined Monastery of Poblet, near Tarragona, Spain." At 7, St. Andrew's-street, E.C. 1. 8 p.m.

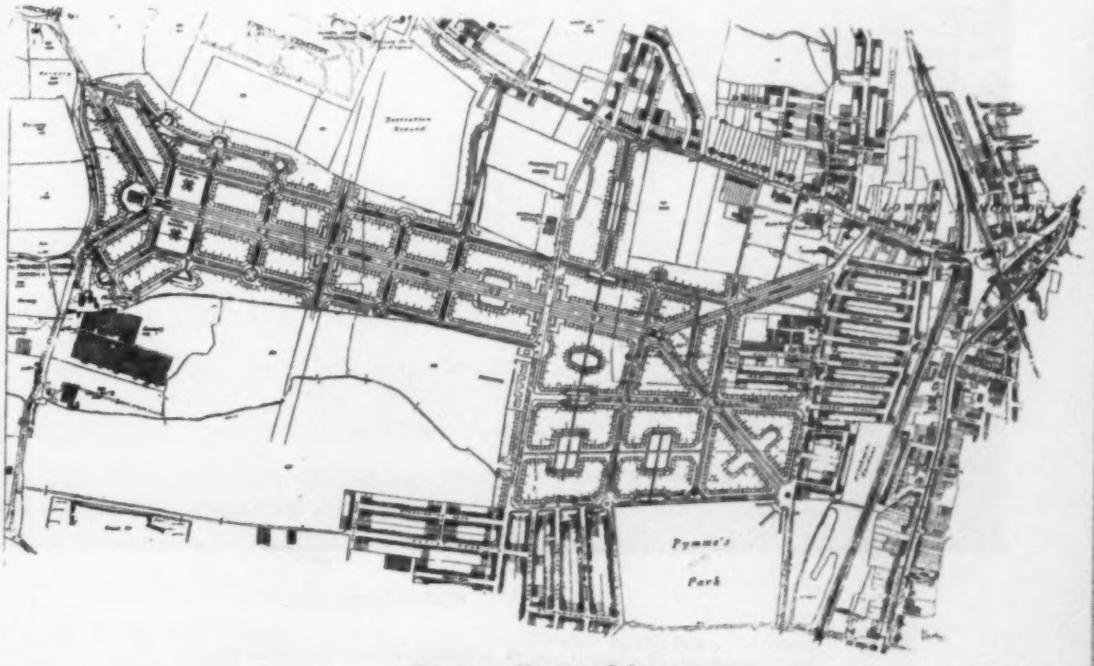
Royal Society of Arts.—Mr. E. Chubb on "Recent Developments in the Manufacture of Safes and Strong Rooms." At 18, John-street, Adelphi, W.C. 2. 8 p.m.

THURSDAY, *December* 7.

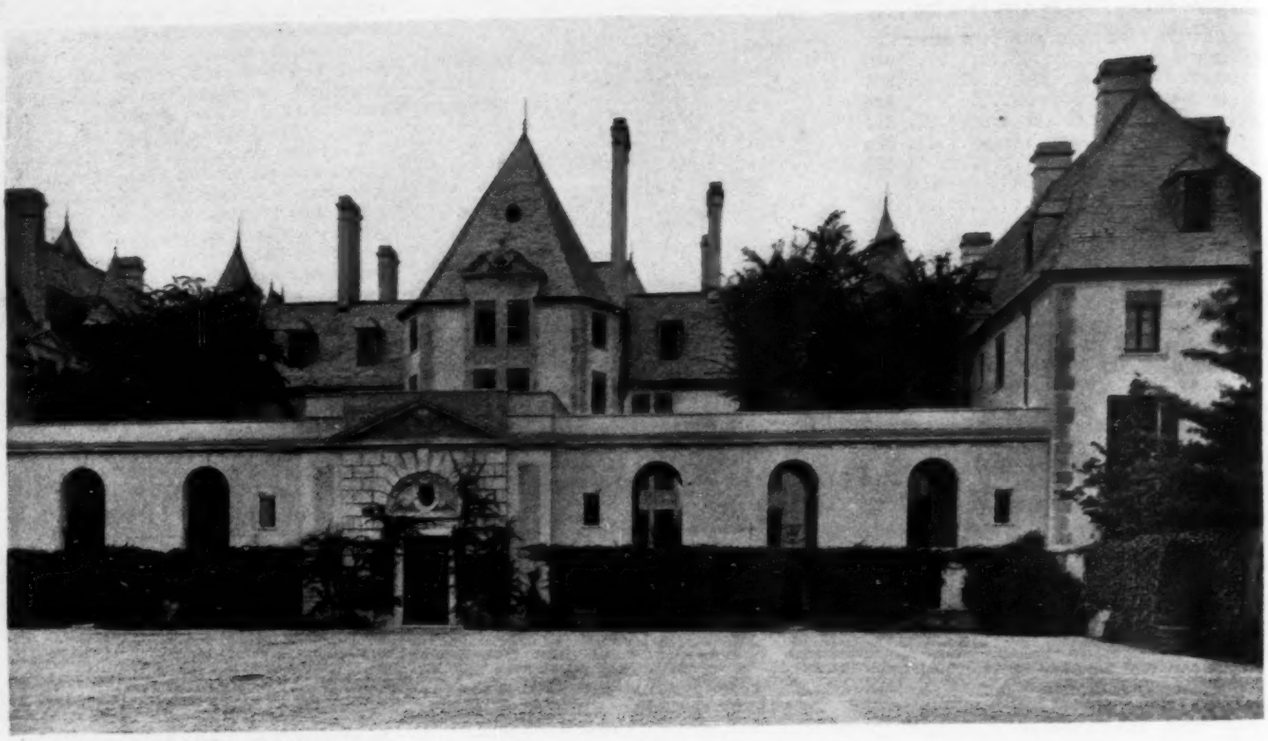
Reading Society of Architects.—Mr. W. McG. Eagar on "Town Planning for Industry." At 11, Friar-street, Reading. 7.30 p.m.

FRIDAY, *December* 8.

The London Society.—Mr. Herbert A. Cox, on "London before the Great Fire and Now." At 18, John-street, Adelphi. 5 p.m.



Edmonton Housing Scheme.
MESSRS. NIVEN & WIGGLESWORTH, FF.R.I.B.A., Architects.

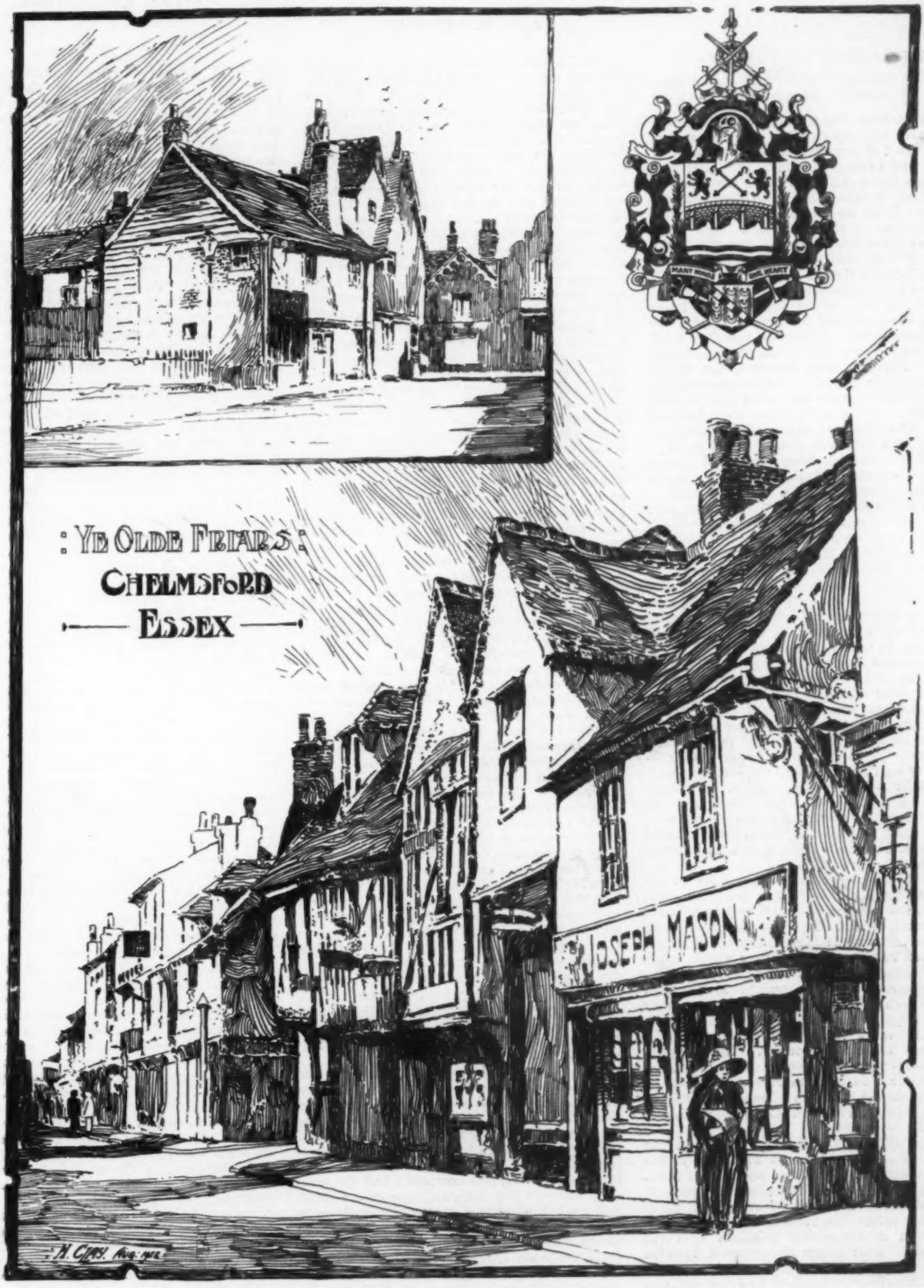


GARDEN FRONT.

COURT ENTRANCE.

A Country House in Amer'ca.

MESSRS. DELANO & ALDRICH, Architects.



From a Sketch by MR. HERBERT CLAY.

[This sketch shows one of the oldest parts of Chelmsford, Essex. It is known as the Friars, or Black Friars, being the site of a house of Black or Dominican Friars in the dim and distant past. It represents a type of the picturesque, now fast disappearing under the stress of modern times. The Chelmsford Borough Arms are also shown on the sketch, being a reproduction of the enamelled Arms on the Mayor's Chain of Office.]

LONDINIUM: ARCHITECTURE AND THE CRAFTS.—XII.

By W. R. LETHABY.

THE ORIGIN OF LONDON.*

"Friendly together: so through Lud's town march."—CYMBELINE.

FIRST BRITISH CITIES.—Ancient cities were not planted down by an act of will, they sprang up on lines of communication as centres of control and commerce. On a geological map it appears that a chalk belt passes from Kent to Hampshire towards the south bank of the Thames. From the north bank another wide belt diverges to the north-east. The backbones of these chalk regions are the North Downs of Kent and the Chiltern Hills; they contain between them a long triangle of gravel drift and marsh flats through which the Thames flows to the sea. These downs, as we know to-day, when we find ourselves on them, are pre-eminently walking grounds, and they must have been the prehistoric ways of communication. "Primitive man traversed the ranges lengthways; in the valleys were forests almost impenetrable, whereas the backbone of each ridge would stand bald above the ocean of trees." The oldest roads were "Ridgeways." On the high Wiltshire downs at, or near, a point where the southern system of downs converge, stands Stonehenge, and I cannot doubt that it was in some way conceived as being a centre and "capital" of the country.* The Gauls recognised such a centre, or "omphalos," near Chartres. Since writing this, I find that Sir C. Oman has said, "Britain must have had some focus corresponding to that for Gaul; possibly among the prehistoric monuments of Salisbury Plain." Stonehenge, I may say in passing, is a monument of wrought stone set out with precision, and I cannot see how it can be earlier than about 500-700 B.C.

The ancient trackway along the Chilterns, known as the Icknield Way, reached the Thames near Wallingford. Travellers going south and east from this point struck across the narrow space of low broken ground between the two chalk ranges by a short linking road. Silchester, the capital of an important Brito-Belgic tribe, lies on or near the course of such a road in a corn-bearing region. Silchester was the key of the old road system over the Thames fords. It is known to have been one of three most important pre-Roman British centres, and we may, I think, look on it as the first British city.

The British city of Verulamium lay to the south of the Icknield Way, in the same great triangle between the two chalk regions which is here much wider. The rise of this centre suggests that a road linking the two chalk ranges had been found across the river valley much lower than Silchester. The later Roman Watling-street, directed straight on Verulam, formed such a link, and there are many reasons which suggests that some underlying British trackway must have been the cause why Verulam became important. Later, again, Colchester came to be the chief city. Possibly it was favoured as being more remote when the Romans should make an attack. It seems to have been named after the Celtic war god, and this may be significant.

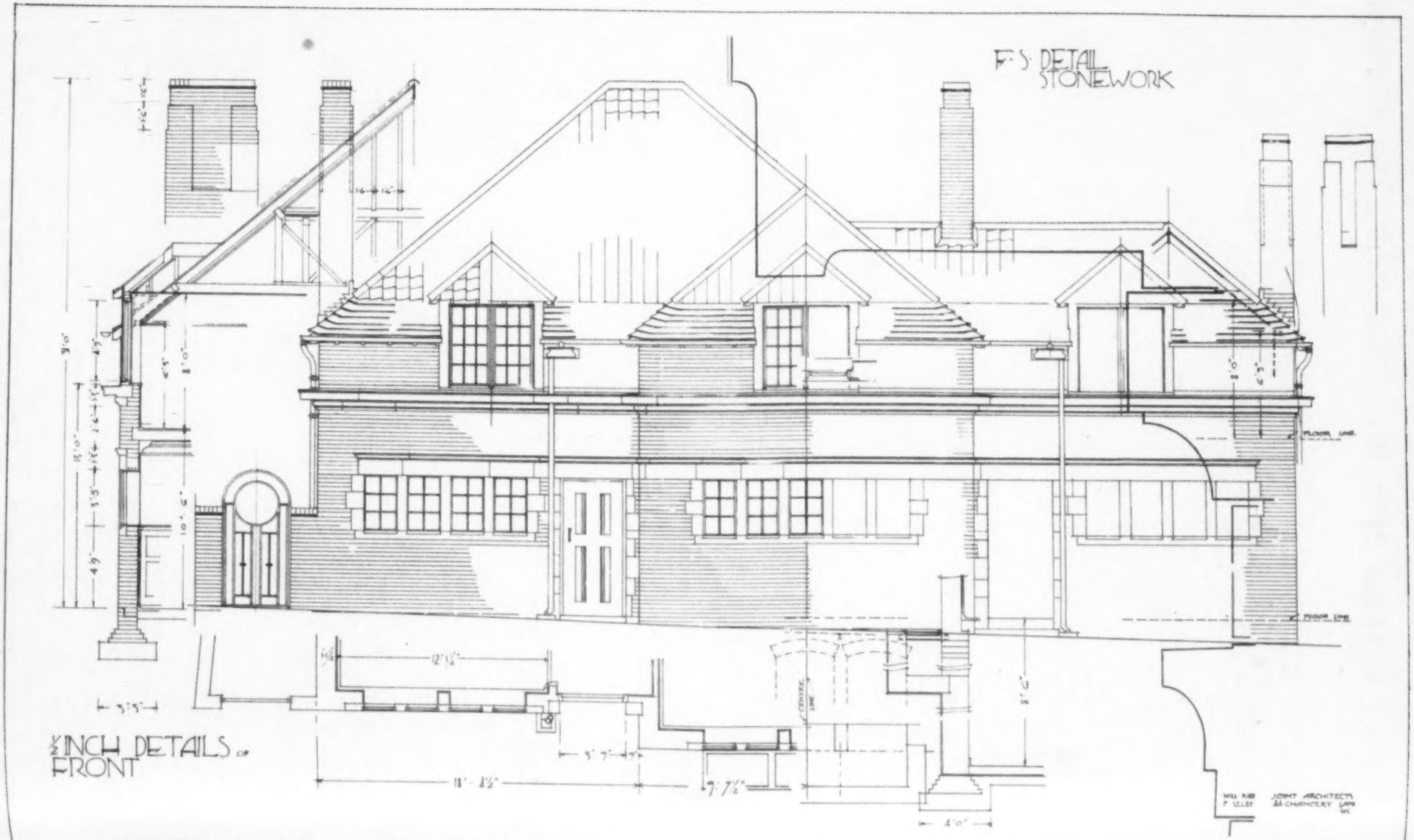
Origin of London.—By origin I mean the beginning of a development which led to the establishment of a port and commercial town. Doubtless the site may have been occupied by some dwellers in the Stone Age. For many centuries before the Roman conquest Britain had been in commercial relations with the Continent. Just before the conquest Verulam was the capital of the leading Celtic kingdom. This Brito-Belgic kingdom had its southern boundary along the Thames and its eastern at the Lea, and these are still boundaries of Middlesex. If this kingdom, with its capital some twenty miles inland, had any sea-borne trade, its port must have been on or near the site of London. It is even probable that this port was the cause of the pre-eminence of the little kingdom to which it belonged. The port was to Verulam what the Piræus was to Athens, Ostia to Rome, Dover to Canterbury, and Southampton to Winchester. London was doubtless the source of the wealth of King Cymbeline, and we might very well look on him as the founder. Dr. Guest argued that London was founded as a Roman camp at the time of the Claudian conquest, but it is now agreed that the name is Celtic, and it must not be forgotten that London is and always was a port. When we first hear of London only 17 years after the Claudian conquest, it was already, as Tacitus says, famous for the number of its merchants, and this must imply that it was a principal port. Dr. Haverfield, while admitting that the name is Celtic, went on to say:—"The name Londinium, the place of Londinos, witnesses at most to nothing more than one wigwam or one barn." This "at most" can only mean that every town presumably begins with one building; in London, however, the building is not likely to have been a barn amid the bare gravels, but rather a boatman's house. Further evidence for the existence of a pre-Roman town is brought out by the large number of Celtic objects found on the site and in the neighbourhood, but they have never been properly catalogued as a group. Dr. Haverfield allowed that three pieces of imported Samian ware in the British Museum might belong to the period A.D. 10–40. "We might then conclude that through the influx of Roman traders London had been noted as a suitable trading centre a few years previous to the Roman conquest, but the minute dating of these potsherds is not easy and we must leave the question of pre-Roman London unsettled. Either there was no pre-Roman London, or it was an undeveloped settlement, which may have been on the south bank of the Thames" (Jour. Rom. Studies, Vol. I, p. 146). The evidence of such early imports is greatly strengthened by the discoveries at Silchester. Mr. May, speaking of the early "Samian," ware, says: "The Silchester examples are of much significance. Together with the contemporary Belgic imitations they prove that the inhabitants of the capital of the Atrebati were importing costly luxuries in considerable quantities from Italy and Northern Gaul at the beginning of the Christian era." Early Belgic pottery has been found in London as well as "Samian" and there is in the British Museum a wine jar of an early type found in Southwark. Some British pottery was doubtless made in Londinium itself before the Roman conquest. Mr. Lambert has described specimens of coarse wares in *Archæologia*. Of one of these he writes: "Bead-rimmed pot, coarse grey ware, irregularly burnt. A pre-Roman type, surviving into the Roman period." He dates it A.D. 50–80, I suppose thinking that it cannot have really been pre-Roman.

London above bridge is an inland city, the English capital; below bridge it is a great seaport. In a description of England, published about 1750, I find this: "That part of the Thames, which is properly the harbour, is called the Pool, and begins at the turning out of Limehouse Reach and extends to the Custom House quays. In this compass I had the curiosity to count the ships, and have found about 2,000 sail of all sorts of vessels that really go to sea." In a twelfth-century rhyme on English towns occurs "London for ships most," and Bede describes London as a great ship port. The city is placed just where the Thames widened into an estuary. At Battersea the river was little wider two thousand years ago than at present; it overflowed wide spaces of marsh about Westminster and again contracted by London. Here high ground came close to the water on the north, and on the Southwark side there was only a narrow margin of low ground. Directly to the east of London was "Wapping Marsh" (*Middlx. Feet of Fines*), and Stow tells of Limehouse marshes being "drowned." Before the lower Thames was embanked the river must have been two or three miles wide, at every tide, a little below London, where the considerable little river, the Lea, runs into it. The higher ground of the site of London is in the angle formed by the Thames and Lea and is the extremity of the northern hills, Highgate and Islington. From the hills several streams flowed through deeply excavated beds into the Thames. The most considerable of these was the Fleet; the smaller Walbrook intersected the site of the city. Conyers in his MS. at the British Museum noted how the Fleet was embanked in 1675 with material taken from old St. Paul's, "to narrow-in the spreading breadth of Fleet river. . . . The waters overflowed these parts in the old times." The general topographical conditions were well observed by Drayton in *Polyolbion*. The city was built on a rising bank of gravel and sand, surrounded by lower ground: the tide flowing up the Lea and Fleet prevented the town from growing too long: to the north and south of the Thames were ranges of hills: "And such a road for ships scarce all the world commands."

Road to the Port.—The men who first came to the site of London must have come from the higher ground of Islington and Highgate; they did not cross the Lea or the Fleet. Before some engineering was done the natural way was from the direction of Verulam. Now, an ancient road lies along this course from St. Albans to Aldersgate. As it approaches London it passes between the Walbrook and the Fleet pointing towards what the old tablet near St. Paul's says is the highest land in the city. The Walbrook where it fell into the Thames must have had steep clean gravel banks containing a tidal inlet—a perfect landing place where small ancient ships could be brought alongside. This creek, afterwards known as Dowgate, must have been the original port of London. Along this old road wine, pottery, and bronzes were carried into the interior, and corn was brought for export. Dowgate is known as a port for foreign ships from Saxon days (Round's *Commune of London*). It is especially interesting to find from Stow that in the fifteenth century the Abbot of St. Alban's has a quay by Dowgate. (Old writers supposed that "Dow" represented the British word for water; recent scholars equate it with *Dove*, but even so there is the curious analogy with Dover and such like place names.) The Roman gates of London, of course, opened on important routes, and "the street from Aldersgate to Islington" is mentioned in the twelfth century (*Middx. Feet of Fines*). Stow says: "From the further end of Aldersgate-street straight north to the Bar is called Goswell-street. Beyond leaving the Charterhouse on the left hand the way stretcheth up towards Iseldon." Again on the old woodcut, usually called Aggas's map, the street out of Aldersgate is inscribed "the way to St. Albans." That excellent old book, John Nelson's *History of Islington*, carries the account of this road forward, and he thought that it was Roman. He quotes a passage from Norden, to the effect that it passed east of Highgate through Tollington-lane, to Crouch-end, Hornsey-park, Muswell-hill, &c. 'Tolentone,' he points out, is mentioned in *Domesday*. This road is laid down on old maps. Recent modifications at Islington may be made out by comparing maps given by Nelson and by Lewis in 1842.

I now quote the passage relating to this old ridgeway road to Verulam from Norden's MS. (B.M. 570). He begins at Clerkenwell instead of from the city: "It is not to be omitted to declare the old and ancient highways heretofore used by our fathers though the new be of greater regard and account for that they yield more ease unto the travellers. There was an old way that passed from Clerkenwell as also from Portpoole [Gray's Inn] towards Barnet and so to St. Albans. From Clerkenwell it extended

* The substance of this chapter was read at the Society of Antiquaries about 1917, but it has not been printed before.



½ INCH DETAILS OF FRONT

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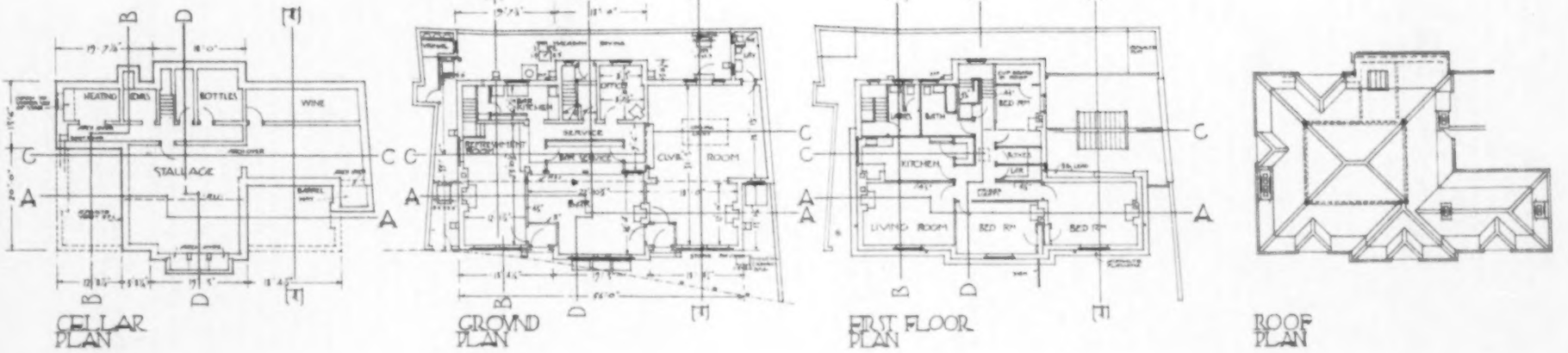

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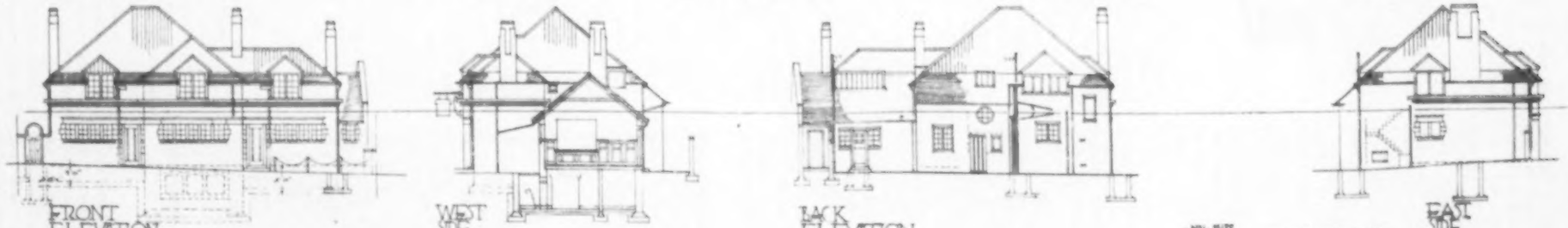


FRONT ELEVATION | WEST SIDE | BACK ELEVATION | EAST SIDE

WILL KIDD
F. SELBY
ARCH

JOINT ARCHITECTS
66 CHANCERY LANE
W.C.

"THE OLDE KINGS ARMS," ELTHAM: REBUILDING. Messrs. Will Kidd & F. Selby, Architects.

as the way now is unto a bridge or brooke between Gray's Inn-lane and Pancras Church, near which brooke it entered into an old lane leaving Pancras Church on the west. It is called Longwich-lane, through which lane it passed along leaving also Highgate on the west and passed through Tolling ton-lane, whence it extended to Crouch end and thence through the Park to Muswall-hill near by Coney Hatch and so to Friern Barnet, from thence to Whetston and there meeteth the new way. The cause why travellers left this old and ancient way was the deep and dirty passage in the winter."

The road is well described in Pennant's Tour (1782): "On quitting St. Albans I passed the wall of Sopwell Nunnery mixed with quantities of Roman tiles. After London Colney on the Colne I reached Ridgehill [!], a most extensive view. At South Mimms enter Middlesex and about a mile farther made Barnet; in Saxon times a vast wood filled this tract. From this town is a quick descent. Just beyond Whetstone the road passes over Finchley Common, infamous for robberies and often planted with gibbets. About a mile beyond stands Highgate, a large village seated on a lofty eminence overlooking the smoky extent beneath. Here, in my memory, stood a gateway at which in old time a toll was paid to the Bishop of London for liberty, granted between four and five hundred years ago, for passing from Whetstone along the present road instead of the old miry way by Friern Barnet, Colnie Hatch, Muswell Hill, Crouch End, and leaving Highgate to the west by the Church of St. Pancras. After resting for a small space over the busy prospect, I descended into the plain, reached the metropolis, and disappeared in the crowd."

The old miry way by Crouch End is, I cannot doubt, the original British road from Verulam to Londinium. (St. Pancras, it may be mentioned here, must be a very old settlement; near by was a bridge over the Fleet river, at a later time called "Battle Bridge," on which name theories have been founded, but I think the bridge may have taken the place of "Bradford in the Parish of St. Pancras," mentioned in the *Feet of Fines*, 23 H. VIII).

A summer's day journey to London, such as Matthew Paris would have known it, must have been of beauty unimaginable when the miry lane was not too wet. Mention is made in the time of Henry VIII of "a capital messuage called Muswell Farm in the parish of Clerkenwell and Hornsey, and the site of a certain chapel in the said parish, now dissolved, lately called Muswell Chapel" (*Middx. Feet of Fines*, 35 H. VIII). A memory of the view of St. Paul's rising from the midst of the walled city is given in a little sketch by Matthew Paris himself. I find this of Highgate in 1753: "On the summit of the hill a view over the whole vale to the city, and that so eminently that they see the ships passing up and down the river for twelve or fifteen miles below London." Of Hampstead: "The Heath affords a most beautiful prospect, for we see within eight miles of Northampton, and the prospect to London and beyond it to Banstead Downs, Shooter's Hill, Red Hill, and Windsor Castle is uninterrupted."

A note of Camden speaks of another old road striking across to Edgware. "Hampstead Heath, from which you have a most pleasant prospect of the most beautiful city of London and the lovely country about it, over which the ancient Roman military way led to Verulam by Edgwoth and not by Highgate as now, which new way was opened by the Bishop of London about 300 years since."

Drayton showed remarkable perception when, describing the hills about London, he wrote of Highgate:

"Appointed for a gate of London to have been
When first the mighty Brute that city did begin;
Its holts to the east stand to look
Upon the winding course of Lea's delightful Brook."

When Walbrook Creek was a landing-place having a road connecting it with the interior, we may be sure that a boating passage across the Thames would be common, and very soon a ink with the road to Dover would be formed on this line. Thus, the road through Southwark must have followed the foundation of London immediately. A is well known, Ptolemy put Londinium in Kent, but he—as Dr. Bradley pointed out—was frequently very wrong in regard to inland places.

An ancient bronze mace-head was discovered in the gravel taken from under old London Bridge, which, I believe, has never been illustrated (Fig. 1). It was one of the mace-heads which are classed in the British Museum as of the Bronze Age, but they are, I think, early British. I have found a drawing of the mace-head in question in some interesting volumes of sketches by Fairholt at the S. Kensington Museum. Fairholt's note reads: "Bronze mace found at Barnes, November 10, 1841, amongst the gravel taken from old London Bridge." Fig. 2 is an early bronze mace-head from Italy, in the British Museum, given for comparison.

FIG. 1.

FIG. 2.

The conditions were favourable for establishing a way in the line of London Bridge, for hard ground here approaches near to the south bank of the river. That the Roman city spread from Walbrook Creek as a centre is now generally agreed. Mr. Lambert's plan of the finding places of Claudian and pre-Claudian coins shows them distributed near the primitive port. Again, the city Watling-street is probably the beginning of the old road from the port. Wren found traces of an old street running aslant under the end of old St. Paul's, and this probably formed the continuation towards Aldersgate. The acceptance of such a route as the main street of the oldest London would solve the difficulty of the "fault" in the lines of Newgate-street and Cheapside. I suppose that the Roman street through Newgate (which all would agree was formed at a late time when the walls and gates were built) branched westward from the old Verulam road I have been describing. In a similar way the Roman road on the course of Old-street probably branched to the east out of the same ancient Verulam road. Mr. Codrington and others have supposed that the road to the east was continued also westward, but no evidence of this has been found. Stow, in his account of Aldersgate-street, says: "On the east side at a Red Cross turneth the Falde-street, so called for that it was the old highway from Aldersgate-street for the N.E. parts of England before Bishopsgate was builded."

The Westminster Crossing.—It was remarked above that the emergence of Verulam into importance probably followed on the use of a river crossing at Westminster and a trackway in the course of Edgware-road, which is known to have been part of a later Roman highway—the Great Watling-street. It is generally allowed, as by Dr. Rice Holmes, that a British trackway underlies the general course of this great Roman highway from Dover to St. Albans and beyond. The monk Higden, writing about 1300, said that Watling-street passed to the west of Westminster, but it has been objected that what the monk thought was not evidence. However, in his time and until about two centuries ago, an important river crossing was maintained at the Horse-ferry. The Horse-ferry-road appears to have been made to divert a direct passage at Westminster when the great hall of the new Palace was built, about 1100. Sighting the line of Tothill-street, we see that it would have passed by the old Palace, but that the Hall blocks the way. The Abbey lies at the side of this line, which seems to mark the boundary of St. Margaret's churchyard. Here, too, were found the Roman tomb and what appears to be a terminus mark (T 11). The Horse-ferry is mentioned in an order of 1246: "The Bailiff of Kennington is to cause a barge to be made to carry people and horses over the Thames" (Hudson Turner's *Domestic Architecture, Vol.* 1). Canterbury documents show that the ferry was later in the charge of the Archbishop of Canterbury, and doubtless Lambeth Palace exists here as being on the great road. In the direct line there still exists a short street called Stangate, which is an old name for a paved way. When Elizabeth, daughter of Henry VII, died at Eltham, "her body was conveyed to Stangate over against Westminster" (Sandford). A way to the river also was maintained through New Palace Yard to a landing place (see Fig. 3, from Norden's map, *c.* 1600). Matthew Paris, in his route map of the way to Jerusalem, shows London Bridge and also Westminster and Lambeth, because these were alternative crossings. Tothill-street is mentioned in Mediæval documents. Testimony on the course of the way from Westminster to Edgware-road is given in Ogilvie's "Road Book," 1675: "Piccadilly . . . on the left falls in the way from Westminster by Tuttle-street; four poles from this corner, you have a way on the right by the side of Hyde Park into the other road at Tyburn." This shows that the road from Westminster crossed what is now Green Park in the direction of Tyburn-lane, now Park-lane. Here, in Tyburn-lane, was "Osulstone," which gave its name to the Hundred in which London city is situated (See map recently reproduced by London Topographical Society). Tyburn, close by, was the place of execution, and doubtless the place of meeting of the old folk-mote of the Hundred, because it was at the cross roads. I have more detail establishing the continuity of this route (on which Dr. Haverfield expressed doubt), but I will pass to a few general final considerations. The primitive road from Kent

FIG. 3

as far as Greenwich was on high firm ground, but beyond was the wide river valley. By bending to the left on the edge of higher ground, through Camberwell the river might be more nearly approached opposite Westminster, and there was solid land on the opposite bank also. Possibly, moreover, there was a ford here at low water. Beyond, at Park-lane, the higher firm ground pushed down towards Westminster, between two little streams—the road here,

indeed, was a low ridge-way. All evidence suggests that a British road to Verulam passed the Thames at Westminster. In Allen's "Lambeth," it is said that three "Celts" were found in digging the foundations of Westminster Bridge. Now, in Fairholt's "Albums of Sketches," at South Kensington, are drawings of three bronze weapons thus described: "Swords and spear found August, 1847, under Westminster Bridge by a ballast heaver." The swords (Fig. 4) were 28½ in. and 23½ in. long, the spear-head or dagger was 16½ in. long. Other pieces of British bronze work have been found in the river in the neighbourhood of the Westminster crossing. Westminster Bridge itself still carrys on the tradition by crossing the river at this point, and it is interesting to find recorded that the building of the bridge in the

FIG. 4.

line of the Horseferry was the first intention. The importance of the Horseferry about 1700 is shown by the list of charges given in Hotton's *New View* (1708).

My general results in regard to the British and Roman road systems may be summarised thus:—

1. A primitive trackway along the North Downs near the south bank of the river.

2. An ancient river crossing at Westminster and thence north-west through Britain.

3. The growth of Verulam on this road and the rise of London as a port in connection with it.

4. A direct London-Verulam road made over Islington—a ridgeway.

5. Hardly two or three persons possessing a boat could have been settled on the site of London before a direct path across Southwark would be taken to reach the Kentish road; thus the route marked by London Bridge must be of pre-Roman origin.

6. Other ways were thrown out; along the Strand to the Westminster crossing; along the comparatively high ground of Piccadilly to the west, and by Old-street and Old Ford to the east.

7. The British road system was rectified by Roman engineers. The chief route was now over London Bridge; the Roman road along Oxford-street was made in connection with the enlarged Londinium issuing from it at Newgate; it was continued to Brentford, where it met the older road by Piccadilly; the old road from Westminster to Verulam was improved only from this road, and the link across the river became of secondary importance; Mile End-road superseded the route by Old Ford. There were thus older and newer roads—British ways following the higher and harder ground; and Roman roads laid down in straight lines.

In saying that London had its origin as the port of Verulam, I would not necessarily imply more than this: each may so have re-acted on the other that it would be impossible to say which was the first cause. It is possible indeed that the Belgic kingdoms of South-East England were founded by invasions striking up the river and that a landing at the site of London was earlier than settling down about St. Albans. It is remarkable that the Cattivellauni and Atrabates occupied much the same relative places in Britain as they did in their Continental homes about Chalons and Arras. In this case, however, London would be none the less the port of Verulam.

Camden clearly saw that London began as a port. Discussing its name, he suggested as one possibility that "It might have had its name from the same original that it had its growth and glory; I mean ships, called by the British Lhong; so that London is a Harbour or City of Ships. For several cities have had their name from shipping, none of which can lay better claim to the name of harbour than our London. For 'tis admirably accommodated with both elements and the river Thames brings it in the riches of the world. Moreover, it is such a sure and complete station for ships that one may liken it to a groved wood so shaded it is with masts and sails."

Conyers, the old antiquary apothecary, two centuries and a-half ago, said: "Verulam was a kingly seat of the Britons and the principal trade they had was between Verulam and London. So that on Watling or Verulam road there was a communication backward and forward."

CLEANING PICTURES.

ON November 15 Professor A. P. Laurie (Professor of Chemistry to the Royal Academy) commenced his annual course of lectures, the first of which dealt with "The Preservation and Cleaning of Pictures."

The question of the preservation and cleaning of pictures was, he said, not a purely scientific one, but involved certain æsthetic considerations, and he suggested that there had been some confusion of thought on the whole subject. To deal first with preservation it might be necessary to take an extreme case where the paint was separating itself from the canvas, to re-line the back or to remove the old canvas and back it with fresh canvas in order to save the picture itself, and this would necessitate the removal of the old varnish and replacing it by new varnish. Or a picture might be so obscured by old dirty and discoloured varnish as to make it absolutely necessary that it should be cleaned in order to be able to see anything at all. In both cases some form of treatment was necessary and justifiable.

A picture might have certain flakes of paint off it and yet be otherwise in good condition, and in such a case it would probably be considered necessary to restore the absent pigment. Here, however, arose the æsthetic point as to whether such a restoration was justifiable. In order that the general appearance of the picture conveyed to the observer what the artist intended it was necessary to replace the defective part, but from the point of view of the minute and careful student of the picture it was essential that such replacement should be known. That difficulty could be overcome by taking photographs of the picture before repair.

With reference to the cleaning of pictures, it might be taken as a general principle that beyond such cleaning as could be done by wiping with a nearly dry sponge or by rubbing up with turps no cleaning should be done unless it was absolutely essential, owing to the serious obscuring of the original picture. It must be understood that the solvents used in picture cleaning for the removal of varnish would also remove the paint layer, and therefore the avoidance of injury depended entirely upon the skill of the cleaner. It was evident, therefore, that such cleaning should be done under the most careful observation of experts who were prepared to stop the process at any moment, and that partial cleaning should be preferred to complete cleaning, with the danger of the removal of paint. Even although the paint layer was not actually dissolved by the solvent it was swollen and softened, and therefore all friction with wads of cotton wool should not be allowed.

While not prepared to give a final opinion as to the safest methods of cleaning, the lecturer suggested that where alcohol was used castor oil should be laid on the surface with a soft brush, and then a mixture of castor oil and alcohol dabbed on with a soft brush and removed by diluting with turpentine and sopping up with a large dry brush. Where alcohol was not a sufficiently powerful solvent copaiba balsam emulsified with ammonia might be used, a preparation of copaiba balsam thinned with a little turps being laid on the surface first. If any friction was to be applied it should be done with a soft rubber point, and at every stage examined under a powerful magnifying glass.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

THE second general meeting of the Birmingham Architectural Association was held recently at the Society of Artists' Rooms, Birmingham, when Mr. W. P. Bloye read a paper on "The Failure of Modern Sculpture and the Remedy."

Mr. Bloye said that sculpture, or the art of cutting things in stone, was looked upon nowadays as, in the first place, a luxury and, in the second place, a something to be made just as the client wanted it, and not as an expression of what the sculptor felt. The art of the so-termed Classic period obsessed the intellectual people of the last century. The technical accomplishments of the Classic sculptors gave a sort of material beauty and the reason it appealed to the greater masses of to-day was because it approached very near to the aspect of to-day. It was the sense of realism that put them below their archaic predecessors. The present awakening of interest in the work of the archaic periods was not a fashion, but a genuine reaction against the soulless and commercial art of modern Europe. Art was not, as some people thought, a limitless expression of anything they chose to do; too much liberty could easily become a hindrance.

The substance of a work of art was its spiritual quality first, its material quality second, and its subject quality third. By spirit they meant faith or truth; they could not kill it, but the right spirit could only exist in service. The spirit of the best work was truth, and with truth came force, while the spirit of the great majority of modern art was profane. In the main, their failure was due to the lack of understanding of their materials. The fact of material in sculpture should run through the whole of it, arranging, governing, and reigning over every portion of it. In all great buildings they saw that feeling, and it had come about because every one who had any part in the making of it was always subjected to the special sense of the particular material used. Under present-day methods, all who were working on a building were subject to the demands of the average architect, who was prone to forget that sculptors required at least as much training to do their job as the architect required to do his. Knowledge was based on actual experience and experiment, and the only way to know what was right in stone was to go and carve it. The right and good was the common property of all good architects and sculptors, and when such men combined good work would result.

Sculptors had, in the majority of cases, entirely forgotten the part material played in their work. To bring the matter to a finger point the failure was due to the fact of the clay model lying behind everything that was done. The word "cut" was surely the reverse to the word "model" or, in other words, the thing from which they cut away must have an entirely different character from the thing to which they added. Clay was the root of the evil of modern sculpture. It should only be used for work to be cast, for clay to be fired, and to a very limited degree, for the furthering of one's knowledge of form. It was all a matter of finding out the way in which the best had been done, and doing it. The sculptor must be made entirely responsible for what he did, and must be given, within limits, a free hand. If architects, at the commencement of a design for a building where sculpture was required, would consult a sculptor, both would benefit greatly.

At the conclusion of the paper which was illustrated by lantern slides, a vote of thanks to the lecturer was proposed by Mr. H. W. Hobbiss, seconded by Mr. A. L. Snow, and carried unanimously.

Resignation.

Mr. Frederick Hughes, who has for two years acted as Carmarthen Borough Surveyor and Engineer, has tendered his resignation.

WOODWORK AND MODERN BUILDINGS.

AT the last meeting of the Institute of British Decorators, held on November 16 at Painters' Hall, Mr. T. P. Bennett, F.R.I.B.A., read a paper on "Woodwork and its Application to Modern Buildings."

The lecturer said wood used structurally had many limitations. It was a material which was subject to movement on account of shrinkage, and was only fire-resisting when used in beams of considerable size to which heat could not readily gain access. Its carrying power was limited, and it was only, therefore, in buildings of a domestic character that it was a structural possibility. Within these limits it was employed universally, but not always to the best advantage from a decorative point of view. In many cases it was covered with plaster when it could be exposed; in others hidden by brickwork. There was no reason why that should be so; so far as plastering was concerned it was little more than a fashion which originated in the middle of the seventeenth century as a side issue of the Classic style in architecture.

Externally the half-timber building had a tremendous fascination, principally, no doubt, because that combination of materials was so full of life and interest, because of the contrast in colour values and its truthful construction. Suitably applied, half-timber work was still a possibility in country districts. It was, however, subject to two restrictions: (1) if used as solid timber backed with the necessary thickness of brickwork to make it fire resisting it was expensive; and (2) if used as surface decoration it was open to the criticism of not fulfilling its true function in the building. However, one occasionally found a client who was really interested in the appearance of a building and in half-timber construction, and its use then became a possibility. In other cases he might be allowed to call half-timber work a method of surface decoration, much as the Romans decorated their buildings with marble sheeting and constructed them of concrete. The great point of the matter was that half-timber work could only be successful if it was developed from the study of old examples—examples in which design actually grew from the necessities of construction. The half-timber work of the jerry-builder was anathema, and the reason for the strong objection of the man of taste to such work was its over-elaboration and senseless application. Its correct use was an instance of power and rectitude arising from knowledge. Even the most elaborate examples of the fifteenth and sixteenth centuries created a sense of simplicity by their composition and massing.

Coming to individual features, the doorway offered the greatest field and was susceptible to the greatest variety. The Georgian architects above all others realised the value of wood in this connection. The scope in that direction was unlimited, the precedent inexhaustible.

The legacy left by the nineteenth century at one time threatened to make the stucco porch a perpetual feature of English architecture. Stucco had its merits, but one ought not to forget the just claims of wood. In the majority of cases the stucco porch had been painted, and the maintenance of the one was, therefore, no more costly than that of the other. One could hardly leave native wood exposed unless he was prepared to pay for the use of oak, and that was not always possible even if it were desirable. It was hypercriticism to object to paint as a means of providing a protective covering to wood or any other material. One might just as logically condemn rough-cast as a covering to brickwork. The wood doorway, therefore, might quite reasonably have fresh prominence in the minds of contemporary designers and again become an element of design of the first importance, as it was in the days of the building of the brick fronts of Gower-street and Bedford-row in London, Church-row, Hampstead, and the delightfully simple façades of the provincial towns which developed at that period.

In recent years the attention of the architect had been re-diverted to the wood cornice of Georgian times, and one might yet find students measuring brilliant examples of that feature executed in the reign of George V.

Passing into the building, the use of wood became much more universal and possessed unlimited possibilities. Again the "all over" carpet and the ubiquitous plasterer had threatened obliteration. The floor was the first point which might receive consideration. It was often an economy and not an extravagance to build the ground floor of wood blocks, riftsawn or polished as the case might be, and to leave such a floor uncovered save for rugs. Similarly, the ceiling might, in many cases, have the first floor joists in evidence with plaster between, and far from being a senseless reproduction of an old style it was actually a sensible and logical way to use the materials of construction as decorative members. The casing of steel joists with wood panelling was just as sound as wrapping them in expanded metal and plaster. There were in existence a number of examples of complete wood ceilings of simple construction which might quite well be used as a basis for modern decoration, particularly as there was now a tendency to over-light rooms in order to capture the sunlight and to provide adequate ventilation. Over-lighting could be softened by a dark ceiling instead of being intensified by one with a strong reflecting surface.

In work of moderate size the wood staircase was still almost universal, but again they were too much tempted to restrict designs to one type of detail. Questions of cost loomed so largely in the background that the architect was only a free agent up to a certain point. At the same time, knowledge and skill could often simplify an elaborate treatment and make its application feasible.

The walls of rooms might be covered with wood panelling of many degrees of richness. The most simple was obtained by a system of rectangular panels without mouldings, depending upon their proportion for effect. For the design of that work inspiration might be drawn from the great periods of English domestic architecture—Elizabethan, Jacobean, and Georgian. Panelling had a unique position as an effective wall treatment. It preceded the Victorian wallpaper and it followed the stone-faced interiors and the arras. It survived at the present moment beside those features, with a very marked tendency to increased use.

There was much fascination both in the effect and in the detail in the work of a larger scale, which was typical of the Georgian period. Some examples obtained effect with the minimum of cost, merely by the application of mouldings planted on the face of a plain field of wood. An excellent instance of work of that character was to be found in the panelled room from No. 5, Great George-street, Westminster, now in the Victoria and Albert Museum. The simple Georgian ovolo with raised and fielded panels was familiar to all, and in many ways stood unrivalled for stateliness of effect. The panelled room from Clifford's Inn, in the same Museum, was a beautiful instance of that treatment. Adam panelling, with its shallow relief and applied ornament, could often be adopted where an expensive treatment was not necessary, just as it might be elaborated to provide some of the most lavishly decorated interiors.

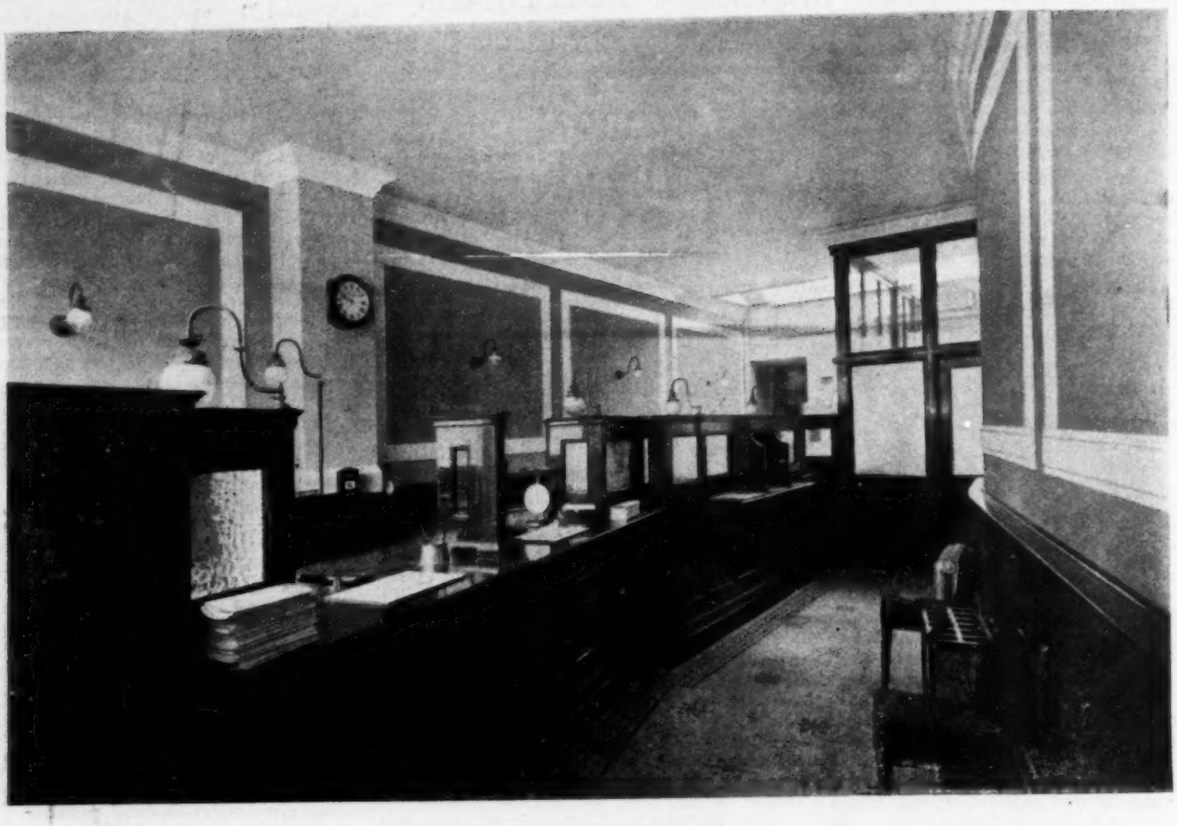
Either in conjunction with, or in the absence of, panelling the doorway and fireplace provided a sound and satisfactory method of ornament. Wooden interior doors were by no means limited in historic architecture to the modern idea of four or five panels, and in the cottages and medium-size houses from the fifteenth and sixteenth centuries onwards were found many examples as a basis for modern interpretation. A few of those might be mentioned, such as that in a house at Exeter dated about 1600, in which the door carried on the lines of the wall-panelling in small rectangular panels, the top two being carved. In that case a great deal of the interest attaching to the door was aroused by the old beaten ironwork hinges and door furniture.

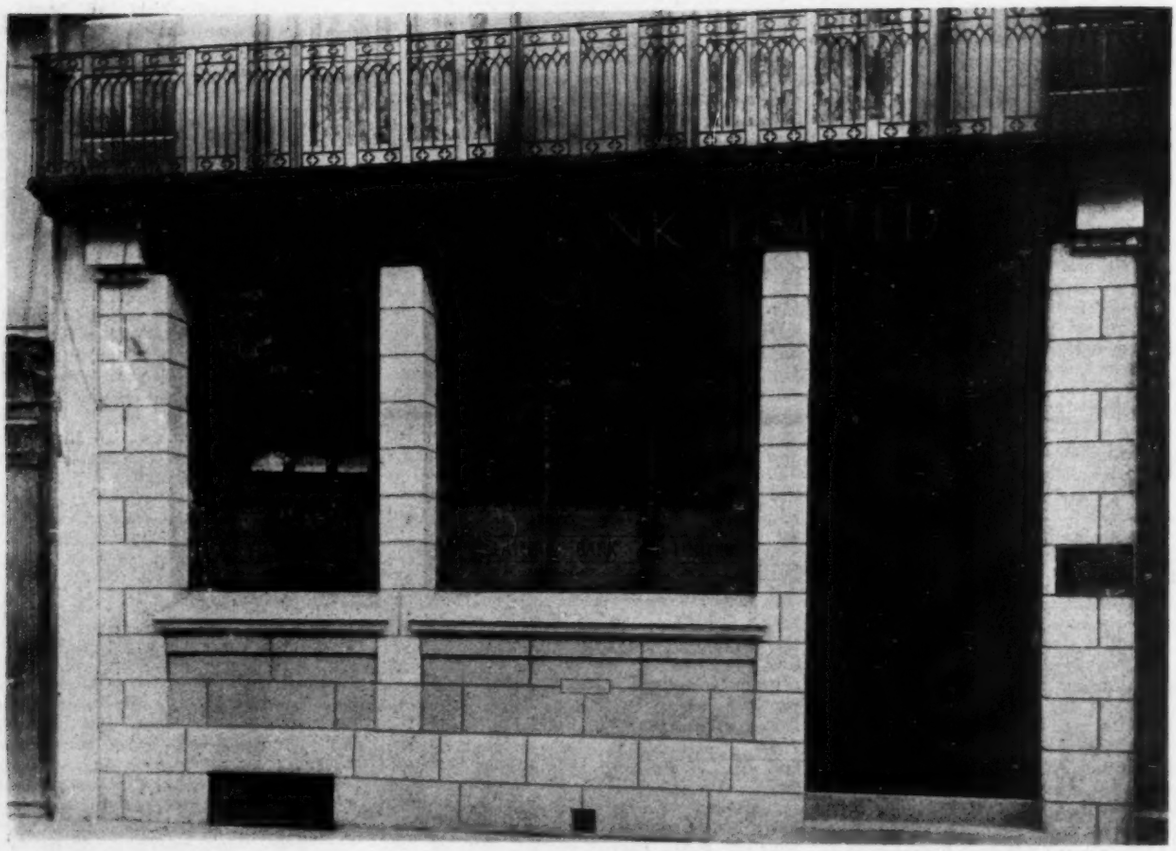
The introduction of wood into the fireplace might commence with a simple system of brick and timber. From that point one might elaborate into the wood architrave, frieze and cornice, pilasters, columns, and innumerable variations; the great point of the matter was that sound and satisfactory decoration might be obtained in wood if the material were reasonably and properly handled. They all knew and condemned the senseless chimney-piece and overmantel of the joinery catalogue, and had no doubt marvelled that the beautiful examples of English domestic work had been ignored in preparing these designs.

It was with pleasure one noticed the tendency of American architects to study Italian interiors, contrasting extensive plaster surfaces treated in light tones with carefully-placed wood detail in doors, windows, and other more or less isolated positions. Where decoration was strictly limited in that way it was often possible to concentrate upon it a considerable amount of care and study, and at times substantial expenditure.

A use of wood which had been gaining increasing favour was the wooden shop-front. The shop-front developed from the ordinary domestic window, and the early examples were only very slightly removed from their prototypes. At a little later stage the possibility of development on original lines became evident, and in London there were quite a number of instances. The only point which must be observed in shop-fronts was the district surveyor, whom he recently found insisted upon 4 in. from the extreme projection of the moulding to the centre line of the party wall. The effect of the window was not necessarily suitable for all trades, but it was worth noting that even a draper now considered that a satisfactory shop-front enhanced the value of his display and was preferable to a sheet of plate glass surrounded by a ridiculous strip of brass.

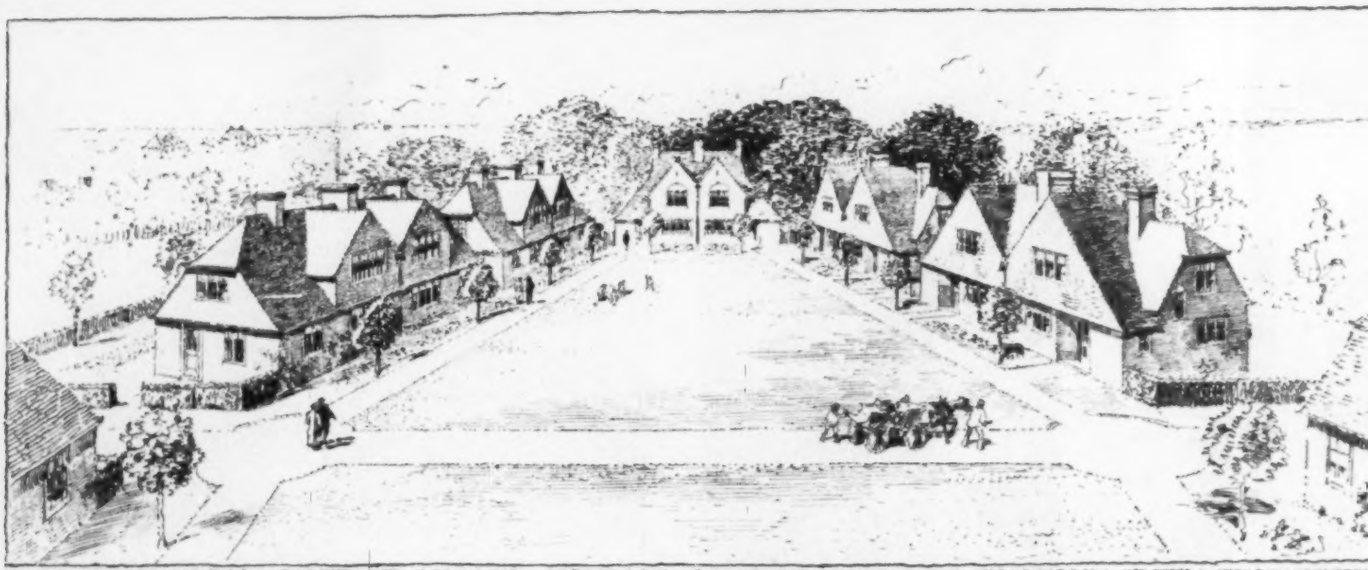
The remaining problem of wood treatment was its finish. On the one hand, some enthusiasts wished to banish all protective materials and use nothing but the native wood, and, on the other hand, utilitarian minds demanded paint or its equivalent in every case. It was a commonplace to say that the proper course lay between those two extremes. In French panelling, for example, a considerable amount of carving was introduced and found to be more satisfactory if carved in oak. Much of that panelling, therefore, was executed in hardwood, but the designer intended from the commencement that paint should be the medium for his surface treatment and consequently he ignored grain, figure, or knots and jointed his panels where necessary for convenience and not for effect. That seemed a logical treatment of oak, and he saw no reason why it should not be covered with paint if that system of decoration were most suitable. Similarly, other kinds of wood panelling might be used and painted without in any way contravening the canons of good taste or the laws of the highest art.





Barclays Bank, Jersey, C. I.

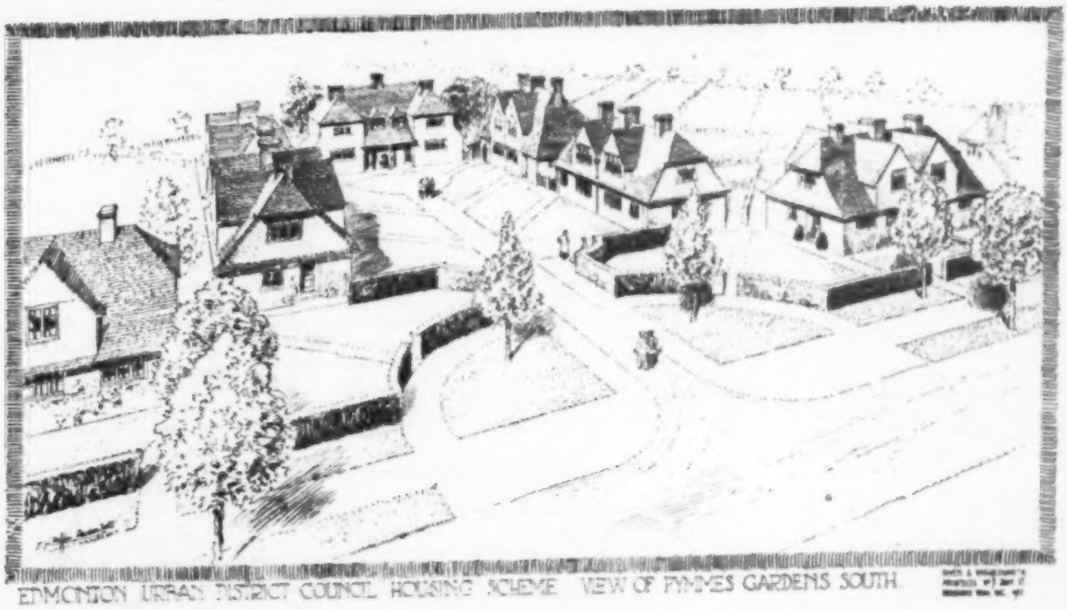
MR. T. A SLADDIN, F.R.I.B.A., Architect. (*See p.* 837.)



EDMONTON URBAN DISTRICT COVNCIL HOVSING SCHEME VIEW OF CHALFONT GREEN NIVEN & WIGGLESWORTH ARCHITECTS

MESSRS. NIVEN & WIGGLESWORTH, FF.R.I.B.

E WIGGLESWORTH
ARCHITECTS



EDMONTON URBAN DISTRICT COUNCIL HOUSING SCHEME. VIEW OF PYMMES GARDENS SOUTH.

H, FF.R.I.B.A. ARCHITECTS.

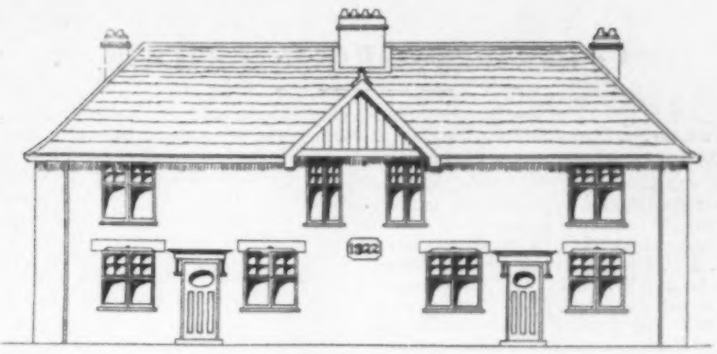
£3'0 HOUSES.

THESE houses for the Bentley-with-Arksey Urban District Council are to be constructed of solid brick walls, the front walls being finished in pressed facing bricks with artificial stone heads to doors and windows. The roof is covered with Marseilles tiles, and the floor on the ground floor in the entrance lobby is tiled; in living-room and scullery are red quarries on 3 in. of Portland cement concrete, the floor of the parlour being a hollow timber floor on sleeper walls with 3 in. Portland cement concrete under. The whole of the internal and external woodwork usually painted is to be painted two coats of best oil in addition to priming, and one coat of varnish. Five-inch moulded skirtings are to be fixed throughout, and a moulded picture rail and architrave in each room.

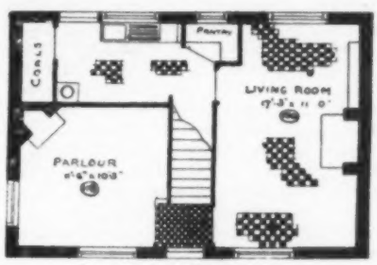
The kitchen ranges are manufactured by Messrs. Cornes & Haighton, of London, and have been altered to the architect's ideas, and are known as the "Bentley-Yorkshire" combination. They have three ovens and a vertical welded boiler with safety valve, the hot water to the bathroom being direct, thus saving the expense of a copper cylinder. Cast-iron white porcelain enamelled baths with hot and cold water are provided to each house, and 20 in. by 16 in. white semi-porcelain lavatory basins are included in each bathroom. The front door hoods are of reinforced concrete, and the footpaths from the gates to the front doors and around the houses are also of Portland cement concrete.

The price of £310 per house includes for cleft chestnut fencing for the sides and back fences, and close boarded fencing for the front, complete with gates to match; also for the whole of the drainage on the separate system, with inspection chambers, fresh air inlets, soil and vent pipes; also eight points of electric lighting in each house. The contract price is a firm one and not subject to fluctuation. The builders are Messrs. T. H. Wilburn, Ltd., St. George Gate, Doncaster.

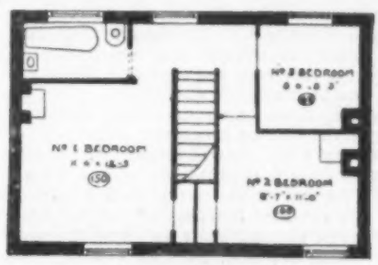
The land upon which these houses are to be erected has been purchased at £10 per acre and fronts on to roads already made, which has made it possible to let the houses at an economic net rent of 7s. 1d. per week. On an assessment of £11 per annum, the rates including water amount to 4s. 1d. per week, making a gross rental of 11s. 2d. Mr. P. C. Woodhall is the Engineer, Surveyor and Architect to the Council.



PARLOUR TYPE HOUSE.



GROUND FLOOR PLAN.



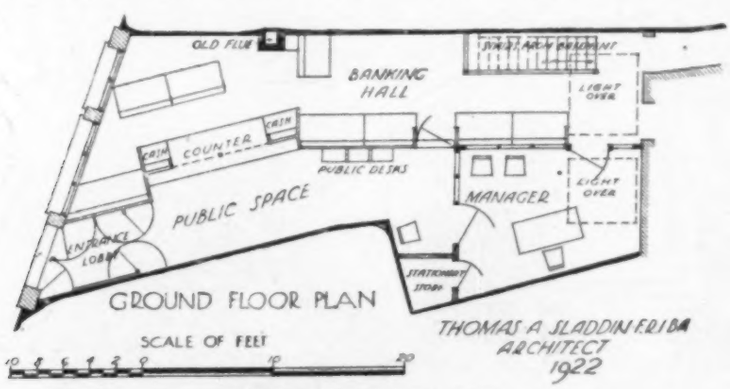
FIRST FLOOR PLAN.

Bentley-with-Arksey Housing Scheme.

MR. P. C. WOODHALL, Engineer, Surveyor, and Architect to the Council.

BANK AT JERSEY.

THESE premises are chiefly interesting as an example of how an awkward site can sometimes be turned to good account. The new branch had to occupy the ground floor of an existing building, and the old balcony railings were made to add interest to and form part of the new bank front. Externally the front is of Jersey granite, with bronze doors, windows and fascia by Crittall & Co. Internally the counter and desk fittings are of mahogany by Shapland & Petter, and the mosaic floor by Carter & Co. Mr. T. A. Sladdin, F.R.I.B.A., was the architect.



Barclay's Bank, Jersey, C.I.

MR. T. A. SLADDIN, F.R.I.B.A., Architect.

BOOKS.

Bournville Housing: A Description of the Housing Schemes of Messrs. Cadbury Bros., Ltd., and the Bournville Village Trust, 1922 (Publication Dept., Bournville Works.)

THIS pamphlet, produced by a firm who were pioneers in the great housing movement, is an exhaustive analysis of the financial side of past and present housing advance. Messrs. Cadbury Bros. have been accumulating experience in this direction ever since Mr. George Cadbury instituted the Bournville Village Trust twenty-one years ago, and their opinion may well bear the stamp of authority. The pamphlet includes an examination of the figures as to rents, loans, &c., all of which are treated fully and concisely; at the same time particulars and advice are given as to the formation and administration of Public Utility Societies, as well as a brief history of the various housing ventures at Bournville that are so universally, if superficially, known to the public. Among the definite conclusions arrived at, we find "that the nation will have to take further action in providing houses for the working classes is inevitable, and that this will be done on a basis which is for the time being uneconomic is also incontestable." This may be unpalatable, but no one who has compared the economic rent with that which the workman can reasonably be expected to pay can be astonished. In a foreword, Alderman Cadbury refers to the desirability of local authorities purchasing land and developing and leasing it, and he further touches upon the necessity for the provision of capital at a low rate of interest. Particulars of a scheme for the granting of loans to employees for house purchase are included. Messrs. Cadbury are generously prepared to forward copies of the publication to anyone really interested in the housing question at this time.

Britain's Decline: Her Economic Disorder and its Only Remedy. By JOHN W. LEA, Fellow of the Royal Economic Society. (Birmingham: Cornish Bros., Ltd.) Price 1s. net.

THE author of this little book attributes the economic ills from which this country is suffering to the malign influence of restricted output, and the whole book is written round this theme. It is all to the good that attention should be directed to this pernicious doctrine, though we doubt if this factor embraces the complete solution of our industrial troubles. A greater output per man in a given time reduces the cost of production, and has the same effect on trade as a reduction in wages, but exactly how far this would take us on the road to recovery now that the "horse is stolen" is one of the doubtful points. We are not altogether in agreement with Mr. Lea's gloomy view of the economic development of this country since 1896, nor with his pessimistic outlook for the future. A book such as this, if it does not appear to bring a solution much nearer, is at least an indication that the problem is receiving careful thought.

The Return of Christendom. By a GROUP OF CHURCHMEN. (London: George Allen & Unwin, Ltd.) Price 7s. 6d. net.

THIS book starts with the conviction that civilisation is rapidly disintegrating, and urges the restoration in new forms of the mediæval ideal of Christendom. The assumption is that the fabric of industrialism is crumbling, and the attacks upon "capitalist industry," and the whole economic system, seem to be based on two obsessions—either that industrialism is responsible for the war, or the war has proved our system of industrialism to be wrong. These are difficult theories to prove, and more difficult, perhaps, to understand than the relation of the Church to the war. Meantime, it is possible to mistake cause for effect, and when industrialism settles down we think we will hear less about its failures.

CHARING CROSS BRIDGE.

We have received the following letter and illustration from Mr. Lionel Barrett, A.R.I.B.A.:

Sir,—In 1916 I prepared a scheme for the new bridge at Charing Cross, which you published in your issue of September 29 in that year. Changes are now taking place which have a material bearing on the proposition. The S.E. & C. Railway is being amalgamated with the L. & S.W. Railway with a common board of directors. The City authorities have referred back the question of the building of St. Paul's Bridge, thus still leaving possible the utilisation of the funds for building a bridge at Charing Cross. Proposals are being made for rebuilding the Adelphi. The Underground Electric Co. are seeking powers in Parliament to connect the Hampstead and Highgate line with the City and South London line by way of Waterloo.

Bearing these matters in mind I have reconsidered the scheme in greater detail, and redrawn my plan. It will be seen that a broad place is formed opposite Waterloo Station to which the new façade of this station is opened up, and the new terminus of the S.E. & C. Railway is symmetrically arranged to face it. The approaches from the new Charing Cross Bridge and Waterloo Bridge lead directly from this place, which becomes a focal point of central London. Any inconvenience which might be anticipated from the removal of the Charing Cross terminus farther from the west central area would be largely compensated by the increased facilities of approach therefrom to Waterloo, belonging to the same company, and, as the new bridge and approach are clear of the existing railway bridge, the new bridge and station could be open to the public before the old Charing Cross Station is abandoned.

A factor that makes an insuperable obstacle under present conditions to the betterment of the south side of the river is the fact that from whichever bridge it is approached the road passes under a main line of railway, which enormously detracts from the value of the property beyond. By this scheme the approach from both Charing Cross and Waterloo Bridges avoids passing under a main line of railway.

Further alterations suggested on the south side consist of the continuation of the river embankment and the straightening of Belvedere-road to pass under the new bridge approach and rejoin the existing line of the road where it passes under Waterloo Bridge approach. Both of these alterations have been commenced for the building of the County Hall. A spur street from the railway place would provide a northern approach to Belvedere-road worthy of the important sites which will become available along the river frontage.

Passing across the new bridge a panorama would be obtained from either side such as cannot be obtained at present in all London. The Embankment Gardens would be enlarged and York Water Gate retained.

Before reaching the Strand an opportunity is given to provide a southern level entrance to the Adelphi from the bridge approach by the continuation of John-street, and facing this a flight of steps leads down to Craven-passage and a widened Craven-street. The Adelphi would also be enlarged and improved by the continuation of Agar-street to the river to meet an extension of Adelphi-terrace.

The line of the bridge is continued across the Strand by the removal of the buildings south of Coutts' Bank, the façade of which would be remodelled to form the angle of the block.

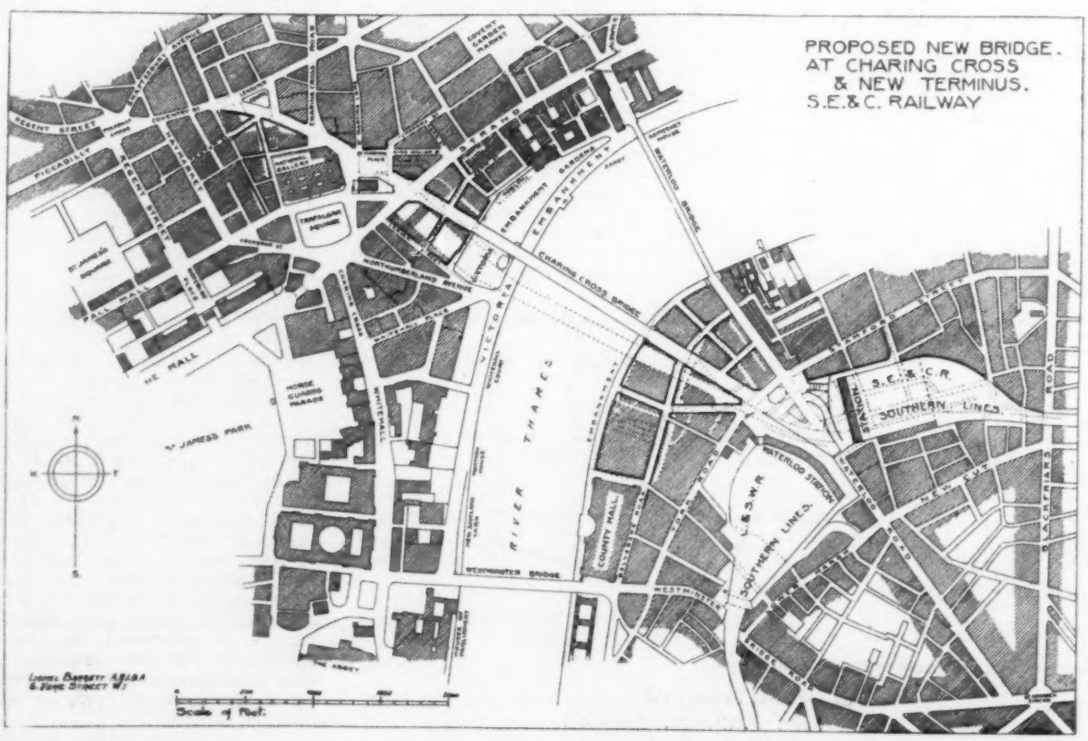
The block of buildings north of St. Martin's Church consisting partly of vicarage and school, and very largely of stables, would be demolished to form a spacious St. Martin's-place, and the boundary of the churchyard would be readjusted. This alteration would collect the traffic from Charing Cross-road and divert it from the bottle-neck between the church steps and the National Gallery. It is evident that before many years the congestion of traffic at this point will be so great that unless some such alternative route is provided it will result in the removal of the church steps, which would be a calamity.

I propose to continue the new road through Leicester-square to Coventry-street in order to pick up traffic bound for the Strand and the new bridge from Regent-street and Piccadilly. In this way such traffic would be conveyed by easy gradients, and would be separated from the Westminster traffic. For this continuation of the road it would be advisable to set back the frontage of the Westminster City Hall. As this building is merely an adaptation of the old St. Martin's Vestry Hall, and its accommodation is even now inadequate to the needs of the municipal offices, it will, in any case, have to be rebuilt before many years have passed.

A remodelling of the frontages and streets to the south of Leicester-square is suggested, with the object of isolating the National picture galleries and improving the value of this area, so that this portion of the improvement may pay for itself by enhanced ground values.

I claim for this scheme that it is the most practicable that has yet been suggested for the re-arrangement of traffic routes and gradients; and the best from the economical standpoint and for its æsthetic possibilities.

It is quite possible that, taking into consideration the increased ground values that would accrue, this scheme for a bridge at Charing Cross would prove less costly than the proposed bridge with its approaches at St. Paul's, and it would be immensely more valuable to London as a whole.

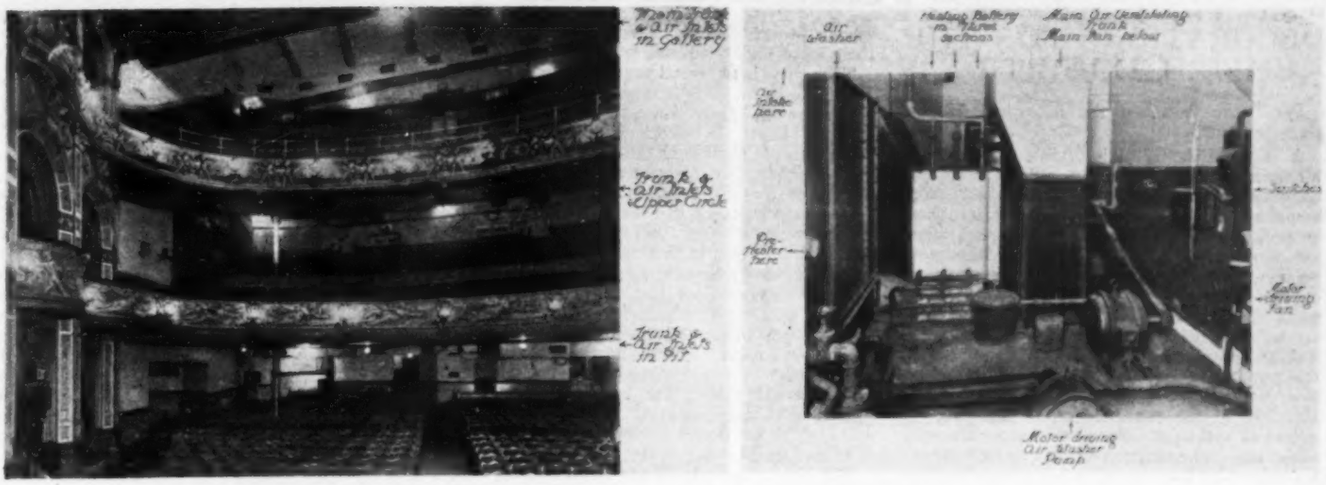


Lawrence Phillips' Memorial Exhibition.

A memorial exhibition of the work of the late Lawrence B. Phillips, F.R.A.S., F.S.A., A.R.E., will be opened on December 1st, at Walker's Galleries, 118, New Bond-street, and in it will be shown a selection of his etchings and paintings, together with some of his scientific and literary achievements.

Glasgow Archæological Society.

The annual meeting of the Glasgow Archæological Society was held recently in the rooms of the Royal Philosophical Society, 207, Bath-street. Dr. John Edwards, President, occupied the chair. The report stated that, the Trades House of Glasgow having appointed a committee to consider the desirability of preserving the M'Lennan Arch on Glasgow Green, the society had been asked to co-operate, and the president had been co-opted on the committee. Dr. William G. Black was appointed president of the society for the next session. In an address to the members Professor R. K. Hannay, Edinburgh University, dealt with Parliamentary government in Scotland.


Trunk & Air Inlets to Gallery
Trunk & Air Inlets Upper Circle
Trunk & Air Inlets to Pit
Air Washer
Heating Battery in three sections
Main Air Ventilating Trunk
Main Fan below
Air Intake Doors
Pre-Heater Fans
Motor driving Air Washer Pump

The Broadway Theatre, Deptford: Ventilating Plant.

MESSRS. BENNETT & HOSSACK, Architects.

BROADWAY THEATRE, DEPTFORD.

Broadway Theatre, Deptfo d, was formerly a theatre for legitimate plays, but for some years has been used as a cinema. In 1919–20 the L.C.C., in the course of various inspections, stated that the ventilation was unsatisfactory. A scheme was submitted to and approved by them, and a plenum ventilating and air-washing plant was installed.

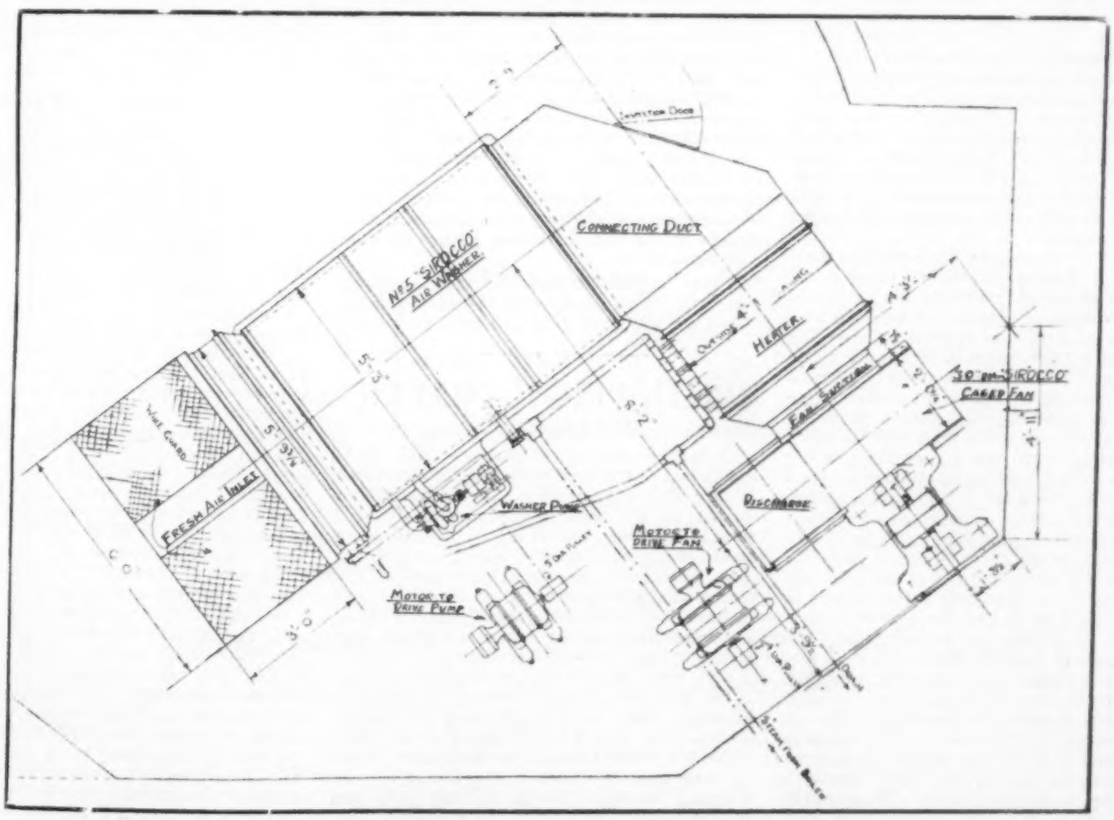
This plant involved the introduction of fresh air into the theatre by means of ducts at the back of the pit, dress circle, and gallery, the ducts being continuous and having openings at intervals to admit the air. The actual aperture is capable of adjustment to suit the volume and velocity required. The air is propelled by a powerful fan travelling at a speed of 400 rev. per min. and drawing the air through a pre-heater and then through a washer. The washer consists of a chamber containing nozzles which produce a fine water spray or screen—3,800 galls. of water passing through the nozzles per hour. The air, after being washed, is passed through a heating battery, divided into sections to give a considerable range of temperature but capable with the pre-heater of raising the air through 30 deg. F.

The number of cu. ft. of air obtained is 575 per person, giving a volume of approximately 800,000 cu. ft. per hour, distributed as follows:—Gallery, 5,976 cu. ft.; upper circle, 3,918 cu. ft.; pit, 4,070 cu. ft.; total, 13,964 cu. ft. per minute, or 837,840 cu. ft. per hour. These figures were obtained by actual measurement.

The L.C.C. requirements were:—Gallery, 3,040 cu. ft.; upper circle, 2,560 cu. ft.; pit, 3,950 cu. ft.; total, 9,550 cu. ft. per minute.

An excess was thus obtained over requirements of nearly 50 per cent., mainly in the gallery. This was due to difficulties met with in the old constructional work, which were very great, and necessitated carrying the main duct across the gallery before passing it down to the upper circle and pit. The number of air changes per hour is 8, and the average velocity 20 miles per hour. The ducts, although necessarily placed upon the surface of the walls, have not proved to be unsightly.

The architects were Messrs. Bennett & Hossack, of 12, Bedford-row, W.C. 1, and the engineers and contractors Messrs. Davidson & Co., Ltd. of 45, Kingsway, and Sirocco Works, Belfast.



Ventilating Plant at the Broadway Theatre, Deptford.

MESSRS. BENNETT & HOSSACK, Architects.

DECORATIONS FOR THE EMPIRE EXHIBITION.

We have received the following from a correspondent:—

A discriminating critic in the *Weekly Westminster*, writing on the extension of the boundaries of modern art, points out that there is much misunderstanding on the matter, that, in fact, the old boundaries have not been extended, the subject matter of the new poetry remaining much the same as that of the old. So that when we read a statement that the aim of the artist, on such an occasion as the decorating of the Empire Exhibition, should be that of putting before the public "a vivid summary in pictures, to typify the varying landscapes, peoples and activities of the countries of the Empire," it is just as well to understand that as a statement about art, and as suggesting that by such means we extend its boundaries, it has no significance. We are much in the habit now of talking of the "past" of art, but in such a way we only include the externals, the mortal part which falls away. The nature of art is always the same, and the reason, if it is the case that art instead of extending its boundaries at the present time has in very fundamental ways contracted them, is well conveyed by the writer from whom we have quoted: "The poet in whose mind ideas are a passion and a personal moving force does not happen to have appeared." And this is because we do not perceive that the practice of art is governed by the life of the artist, which is his own "personal moving force." This new machinery for art—that it should direct itself "to the peoples and activities of the countries of the Empire"—brings us no nearer to our goal. Highly-coloured panoramas of cotton-fields or sewage works may be the soil of art, but they are not the harvest, which lies within the heart of the artist, nor can it be there if his life takes but the colour of his own time, and if he adopts the life of society, its aims and ambitions, which are not his own life and cannot be so. We are reminded of the comment of a discerning critic on the work of an artist: "If he will only become grave and reserved he may do great things, I think"—that is to say that his work was not yet charged with the underlying impress of his own nature. The personal moving force was less than that from without. It was "natural" only—the subject matter of art, rather than art itself. Perhaps, too, with an eye on the gallery, since the artist must live—which has also its reward but not the reward of the artist, for that must be reached elsewhere.

A scheme of decoration such as that proposed for the Empire Exhibition raises many questions, and we are glad that the subject is receiving so much attention, and we hope that due co-operation will be secured between the architects and "the artists of high order under an art master," so that the work may be planned in close co-operation. For on art matters there is evidence of great disparity of view on fundamentals. There are some who will identify mural painting with the art of the poster; others who will see nothing identifiable between them. Due to the wide diffusion of a certain kind of craft knowledge through the art schools, and partly from new directions in life itself, any settled traditions no longer stand to guide us. We read in the announcement of the aims and methods which the promoters of the decorative scheme for the Empire Exhibition have in view that, under the guidance of a master, there are artists "able to execute decorative art of a high order." And in case the public, reassured by this statement, should be under any confusion as to the kind of master, it should be pointed out that a "master" in this case does not mean an artist of that kind of rare distinction that we associate with the title, but an "art" master, a teacher of art at the art schools. There is little cause to criticise this arrangement if no other kind of master is forthcoming, though we are not sure that practising artists of eminence might not be found, though less in touch with officials' organisation than officials themselves, and being wholly artists, not teachers at art schools, there should be some advantage in their more undivided and greater practice.

These new interpretations of "Art in Common Life" we had hardly adequately foresee, and it may be that there is advantage to be gained through them, in differentiating two interpretations of art, that of the art school and that of the artist. Not because of any stigma that we attach to the former, for there is evidence of real improvement in commercial art, but in making more evident the existence of another. And it may be that in this cleavage, this flooding in of one sort of democratic art, identified mostly with our commercial ideals, we shall better discern another more interpretative of our spiritual well-being, and that on the foundations it is now making amidst much struggle and failure, that other art will rise which stands for more eternal things, for larger hopes, more exalted ambitions; seeking its subject matter amongst those things on which, if civilisation is to endure, it will yet rest its hopes.

Yet commercial art stands for something real, and an ability and resource is growing round it which it would be ungenerous not to recognise, and it may be that the kind of decoration that is in our minds when thinking of the British Empire Exhibition is that kind of art which most nearly approaches to this title, which has made considerable progress through a stimulus given to it through the art schools. Only let us remember that while this kind of decorative art, a sort of mural "poster" art, does perhaps serve the time and its needs, it does not identify itself in the minds of many who are not art masters as being the last word in mural decoration. There is, perhaps, at this time no atmosphere for that more detached and authentic art that we associate with the great traditions of mural painting, and that as a step towards their recovery; this more obvious and superficial "decorative art" best suits the objects it has to serve, but when we are told that the decorations will be directed by a "master" we should understand that the more extended implications which we connect with the name are not included.

Not that there is any special reserve or sanctuary for art, or protected area. There are no favourable times for art, but there is art. Nor is this the last word of the matter, for art is of no time or place, or particular subject matter, nor is opportunity either here or there. Circumstances hardly thwart or achieve it, for it is the expression which answers most to that freedom of life which yields up its noblest and truest conceptions, which sees life as a whole and entire. Relying on these its dauntlessness is fiercer, more unbending, and though on its more extended journey it may suffer shipwreck.

"It may be that the gulfs will wash us down;
It may be we shall touch the Happy Isles,
And see the great Achilles whom we knew."

EXHIBITION NOTES.

THE GROSVENOR.

THERE is striking excellence which gives distinction to the large gallery at the Grosvenor Winter Exhibition. Added to the undoubted quality of the painting we should say that Oswald Birley's portrait of H.R.H. Princess Mary possesses the great merit of setting forth all the good qualities of the subject and realises the charm which she presents to all who know her; in form and colour the portrait leaves little to be desired. There are other noticeable portraits: "The Viscount Chelmsford," by Gerald Kelly; the "Mrs. Calley," by Sir John Lavery; "The Hon. Mrs. Edward Kitson," by Ambrose McEvoy; and the "Olive Snell," by Oswald Birley. The Hogarthian humour of Sir Wm. Orpen's "Barrel Organ," the decorative charm in tone and colour in "The Palace of the Sleeping Beauty," by R. Anning Bell, and similar values in Patrick W. Adam's "Hall, Bryanston Square," cannot fail of appreciation. There are several other subjects better than the ordinary by Ed. Chappel, Adrian Stokes, Geo. Clausen, and D. Y. Cameron. Nothing seems to call for serious comment in the other galleries. There is a telling winter scene by Wm. Rothenstein, a clever portrait by Ambrose McEvoy, and a good likeness of an architect, Clough Williams Ellis, by Oswald Birley. In the corridor is a good sketch of "The Hall Interior, St. Bartholomew's Hospital," by Hanslip Fletcher.

MURAL DECORATIVE ART.

It is a very suitable time now for the exhibition of mural decorative art, which is projected for the months of January and February, and it is to be hoped that it will have good results in directing attention to the many opportunities which modern buildings offer and to the various talents which are available for the application of decorative painting and sculpture. We believe that the fear of undue and extravagant expenditure is often a hindrance which might be removed if those who would pay for such work and those who could execute it could be brought into closer contact, and come to realise that the difficulties are not so insuperable as they appear.

METALWORK AT THE A.A.

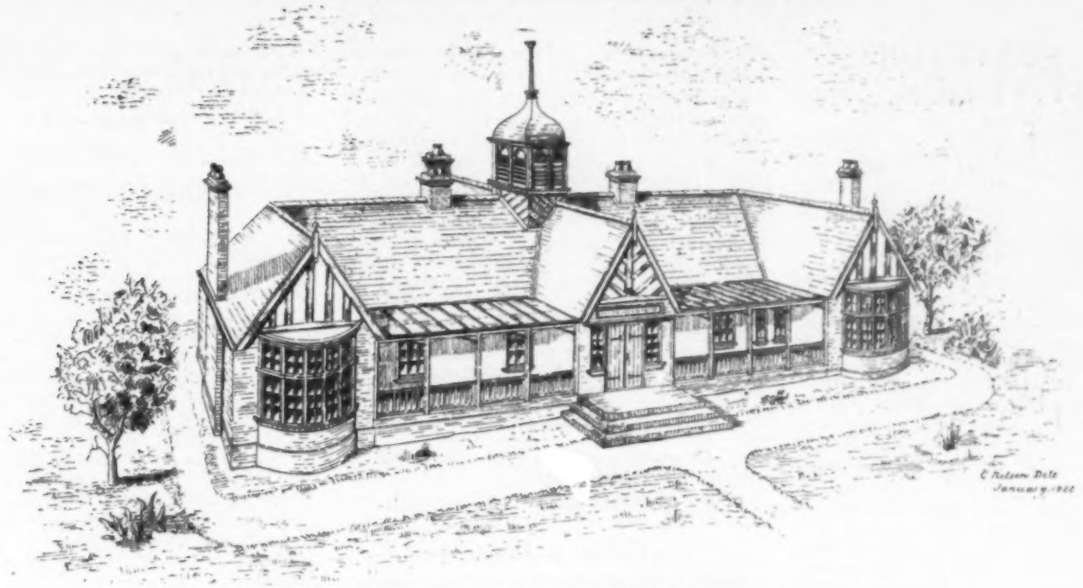
The collection of door and window furniture at the A.A. is a good one and must have good results in showing the standard of quality which some of our leading manufacturers have achieved. Most of the exhibits represent rather expensive work, and perhaps in the future it might be possible to bring together some of the simple and inexpensive work which is possible in wrought iron. Some fine old examples are shown from South Kensington. It is well for architects to recognise the efforts which these exhibiting firms have been making to show how good fixed patterns of goods may be.

REPIN.

We have had an opportunity to judge of the fine paintings by Repin in a collection of forty pictures at the Leicester Galleries. The amazing virility of the portraits must have greatly impressed those not already familiar with the work of this gifted artist, and one's sympathy goes out to him in the clouds which have gathered about the close of a brilliant career. The quality of colour and drawing, the dramatic intensity, and the direct sincerity of the work, made this exhibition of the Russian painter's work one of the most notable recently held.

MODERN ETCHINGS.

What is the money value of etching to its modern exponents may be possibly pretty well known to dealers, but one would be interested to know what sort of a market exists for sincere and capable work which lies outside the magic realm in which exists the names of Whistler, Haden, Zorn, and Meryon. It seems to us that the possibilities of beautiful work which may come within the purchasing power of the average buyer are by no means fully exploited. The proportion of these in such an exhibition as the present is rather lamentably small. There should be an endless range of subjects to be capably expressed with the special qualities proper to good etching. We realise what an etching may do for us in the marvellous expression of serenity in "The Silent Seine," by A. Raine-Barker (114); and in the very beautiful "Hills of Tulloch," by D. Y. Cameron (90), in which we see how much the combination of tone and line can accomplish. We see the antithesis of expression in McBey's "Dust Clouds" (100), and F. L. Griggs' "The Minster" (125). The breadth and solidity in Albany Howarth's "Rochester" (95) has its antithesis in the loose and inexpressive handling of "The New Bedford," which was surely not worth drawing at all. We cannot all possess such things as Whistler's exquisite "Dawn" (60), or the work of Zorn, Cameron, Meryon, or Lepere, but there should be a large field for capable etchers in the sort of thing many of us can afford. It is this kind of work we are hoping to see increased. Architecture presents wonderful opportunities for the etcher, even if he cannot, or will not, imitate the vague mystery of Walcott, the tight gravity of Griggs, or the loose handling of a Lepere or Sickert. How seldom the artist allows the best qualities of architecture to make a simple unforced appeal we all know.



Gosforth Urban District Council, Child Welfare Centre.
MR. GEORGE NELSON, A.M.Inst.C.E., Engineer and Surveyor to the Council.

THE RENT ACT: CONVERTED FLATS.

The case How *v.* Martin (*The Times*, November 21) will be noted with interest by our readers. The plaintiff, in September, 192-, having converted a house in Hornsey into two or more residential flats had let the major part to the defendant and the lease having come to an end he was seeking to recover possession from the defendant. The defendant contended that the flats were not within section 12 subs. (9) of the Rent Act, and therefore the Act applied to the claim for possession, as the alterations in the structure were so flimsy and slight that the premises could easily be reconverted to their former state. It appears from the report that some of the partitions were only formed of asbestos sheets.

The Judge, in the course of the argument, intimated that as there was some question whether two or three flats had been made, he should hold, subject to further argument, that if a person set out to make three flats but only succeeded in making two that would be a compliance with the subsection. The Court also pointed out that the Borough Council had rated the inmates on the assumption that there were three flats.

In the judgment delivered the Court held that at least two, and probably three, separate tenements had been constructed, and that the case fell within the subsection in this respect, and it also held that although some of the alterations were of a somewhat flimsy character a great deal had been done of a substantial nature such as providing lavatories, &c., and that the premises had lost their identity. The learned Judge also said that although outwardly the premises presented the same appearance, yet considering the amount which had been spent upon the reconstruction it was quite inconceivable that the house would ever be restored to its former state, and he gave judgment for the plaintiff for possession with mesne profits.

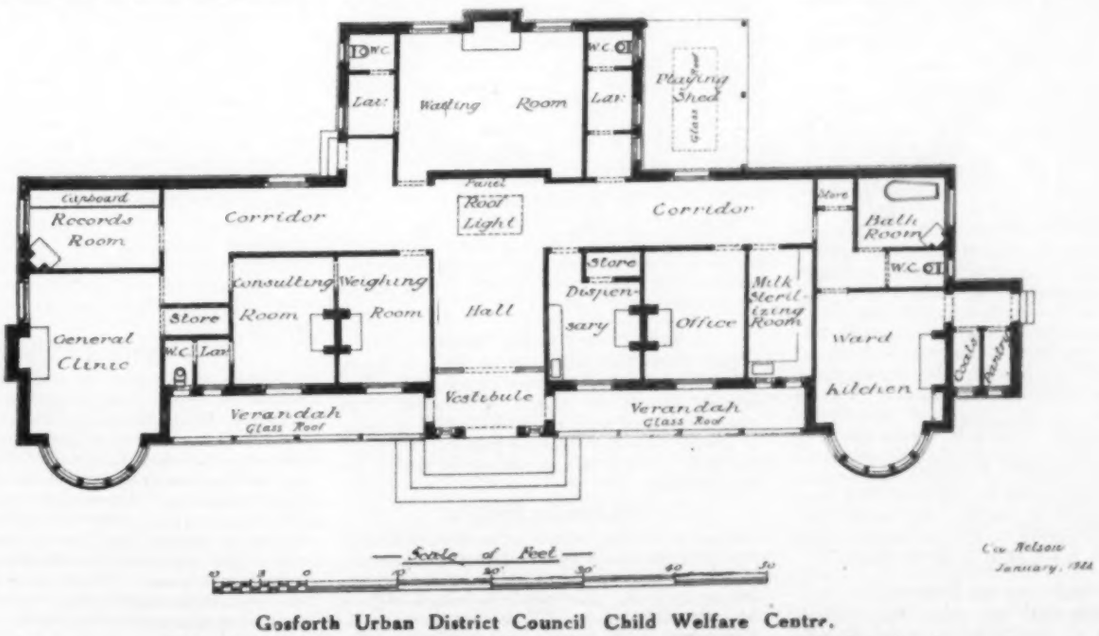
It will be remembered that the test laid down in Sinclair *v.* Powell (1922, 1 K.B. 393; see *The Builder*, April 28, 1922) was whether or not the house had lost its identity as a necessary condition to bring the conversion within the subsection, so the Court was following this decision. The case Phillips *v.* Barnet (1922, 1 K.B. 222) noted in the Court of first instance (*The Builder*, September 9, 1921) was also referred to.

GOSFORTH CHILD WELFARE CENTRE.

The area of the site is one acre, and the north elevation faces Church-road. The building is of red pressed brick, with red tiled roof and solid floor, and is divided into two sections, east as clinical, and west as administrative. The lighting is by electricity, and the heating by coal fires and gas stoves. A panel is provided, facing the vestibule, for a tablet containing the names of local residents who fell in the war. The Council provided the site, and the estimated cost of the building, which will be met by public subscription, will be in the vicinity of £6,000.

Victoria and Albert Museum.

It appears not to have been generally recognised that during the eighteenth century furniture of a high standard of execution was produced in Ireland, following the main lines of the English styles of the period, but with characteristic differences. A group of examples of this class has now been arranged for exhibition in the Loan Court of the Victoria and Albert Museum.



Gosforth Urban District Council Child Welfare Centre.
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THE SURVEYORS' INSTITUTION.

THE opening address of the 1922-1923 session of the Surveyors' Institution was delivered by Mr. J. McClare Clark (President) recently, and in it he referred to many matters of interest to the profession.

The College of Estate Management.

Education, he said, had always been one of the principal objects of the Institution. When Sir William Wells launched his scheme for a College of Estate Management the Institution was keenly interested, and he was glad to say that the negotiations between the Auctioneers' and Estate Agents' Institute and the Surveyors' Institution, which were carried on in a most friendly and disinterested manner, had resulted in the two bodies co-operating mutually in the furtherance of the project. As a result of a petition to His Majesty a Royal Charter had been granted to the newly-founded College, under which the Institution and the Auctioneers' and Estate Agents' Institute were equally represented on the Board of Governors. The number of students who had already entered was satisfactory, and the prospects of a useful and successful career for the College were exceedingly bright.

Professional Registration.

On the subject of registration the three societies concerned—Surveyors, the Auctioneers, and Land Agents—were co-operating in a most harmonious manner; a Bill was already in draft, and it was hoped an effort might be made to obtain legislative sanction thereto during the coming session of Parliament.

Agricultural Conditions.

After a comparison of agriculture at the present time with the conditions prevailing at the end of the Napoleonic wars, he said the country required the land to be put to its best use. It demanded that the maximum amount of foodstuffs should be produced and the greatest amount of employment offered at a living wage. The farmer raised no objection to that demand, but pointed out that, like every other commercial undertaking, his business must be governed by its profit and loss account. He could not afford to grow food and employ labour at a loss, but must follow that system of farming which gave the best prospect of a fairly steady and certain return. The question at once arose whether the requirements of the nation and the farmer were compatible with each other, or were they purely antagonistic. The Labour Party offered no reply to that vital question. It did not show how arable land could be made to pay in the face of unrestricted imports of cheap food; and unless that problem could be solved satisfactorily the main planks of its platform fell to the ground. He was of opinion that except on specially suited soils, and in districts favoured climatically, farmers in this country could not hope to compete with the great wheat-growing areas abroad. But that did not necessarily mean that pasture must continue to supersede arable land. There was, he believed, complete unanimity of opinion among scientific agriculturists that the produce per acre from arable land far exceeded that from pasture. He would, therefore, suggest that the settled policy of the State should be in favour of stimulating arable cultivation. The public were too much inclined to think that the plough necessarily indicated the growth of cereals, overlooking the fact that by its use the production of meat and milk, in the market for which this country could hold its own more easily against the foreigner, could be greatly increased.

Notes from the Minutes.

ANNUAL COUNTRY MEETING.—The Council has accepted an invitation from the Scottish Branch to hold the Annual Country Meeting next year in Edinburgh.

METHODS OF MEASUREMENT.—The Joint Committee representative of surveyors and contractors, which has for some years been engaged in preparing a comprehensive manual laying down standard methods of measurement for builders' work, has now completed its labours, the object of which has been to secure greater uniformity throughout the profession in all parts of the country in the preparation of bills of quantities. The handbook will shortly be ready for publication.

THE ROLL OF HONOUR.—The Roll of members of the Institution who served in the war, comprising approximately 2,000 names, has been completed by Miss Margaret Holden.

HOUSING AND TOWN-PLANNING NOTES.

The National Housing Scheme.

In the course of a contribution to the *Kensington News*, Councillor W. H. Raffles says:—"When the late Government passed the Housing and Town-Planning, &c., Act, 1919, with a view to providing the much-needed new houses, they did so against all expert advice. When the war was over, the only possible way of getting the building trade to work again was to give them their pre-war freedom as soon as possible. However, the Government brushed aside all objections, and for all practical purposes set to work with a monopoly of the building trade. The only result of this was the inflation of prices to an iniquitous level; and the building trade unions, taking full advantage of the position, pushed up wages and, it is beyond doubt, reduced the output per man. The combined result of all this was to make the cost of a cottage prohibitive; and finally the Government had to abandon their scheme, having saddled the country with an outlay of £10,000,000 per annum as the price of their folly. . . . Up to the date when the scheme was dropped, about 175,000 houses had been built; and the final number built under this Government scheme will be about 215,000.

"The general result of this blunder is that, four years after the Armistice was signed, we find the housing position worse than it was at the end of the war; that is to say, we have only about met the requirements of the increase in the population; have left the notorious slums almost untouched, and allowed vast numbers of existing houses to fall into a very bad state of repair, mainly owing to the prohibitive cost of all repairs, directly due to the same causes which made new construction quite impossible." Councillor Raffles goes on to deal with the housing conditions in Kensington, and points out that the great problem to be dealt with in the locality is the existing working-class houses, many of which are getting into a deplorable condition.

The Building Guilds.

Newcastle Housing Committee has, it is reported, given the Building Guild a week in which to resume work on housing contracts, otherwise it will make other arrangements for completion of work.

York Town-Planning Scheme.

The York town-planning scheme is going through a very trying time owing to the objection of certain owners of houses. The matter will now have to go before the Minister of Health, who will hold an inquiry, at which the objectors will be represented as well as the City Council.

York Housing Problem.

The York City Council have decided to proceed with the completion of its housing scheme; 12 houses only will be subsidised and there are 200 to be built. The estate has been laid out for over 400 houses, 201 having been built. Altogether, 1,500 houses are required. The lowest tender per house was £365, and the addition of the cost of land, drains, and road will run the cost up to £425 per house.

BEAUTY AND UTILITY IN TOWN PLANNING.

IN the course of his seventh lecture at the Birmingham University recently, Mr. William Haywood, F.R.I.B.A., said that in the records of town-building traced in previous lectures through 4,500 years, the two outstanding factors to which attention had been directed, and by which successful town design had been measured, were structural convenience and beauty of form. Where one of these factors had been deficient in early cities, convenience had usually given way to amenity. Athens did not forget convenience; she condemned it. She concentrated on beauty. Florence made no reference to utility in her decree of 1294, but set about the rebuilding of Santa Maria Reparata with much "prodigality of magnificence"; and it would usually be found that where a community thought collectively a gracious environment would accompany convenience, or exist without it.

In modern Paris, beauty had been as consistently sought for and as successfully achieved as traffic convenience and general plan efficiency, although it was probably more difficult to secure amenity and convenience together than either of them apart. It was also evident that to the promoters of their own Town-Planning Act of 1909 both factors were of equal importance; yet it could not be said that they retained that relation in practice, and hence it was necessary to stress the value of beauty in towns. That value could be most effectively demonstrated in the great building periods of the past; but while the past might stimulate by example it could not properly serve as a model. Modern cities which sought to give their growth an appropriate expression must effect that by an imaginative treatment of their own vital energies. Industry and its equipment had much potential beauty, and industrial cities offered great opportunities for a new type of expression in civic design.

THE COLLEGE OF ESTATE MANAGEMENT.

Road-Making.

THE first of a series of four lectures on "Road-Making" was given at the College recently by Mr. T. W. A. Hayward, M.Inst. C.E., M.I.M.E. (Past-President of the Institution of Municipal Engineers), Borough Engineer of Battersea. Mr. Hayward pointed out that the history of road-making really commenced with the Romans, and described the work done by them in this country. After the departure of the Romans road-making became a past science, even though attempts were made to revive the work done by occasional statutes through the Middle Ages. It was not until Metcalfe started the making of roads in Yorkshire about the end of the eighteenth century that modern road-making began. Metcalfe was followed by Telford and Macadam, who perfected at that time the science of road-making.

Domestic Sanitation.

The second lecture of the series on "Domestic Sanitation" was also recently given at the College by Mr. E. H. Blake, C.B.E. The lecturer dealt with the internal fittings necessary for the proper sanitation of the modern dwelling, pointing out the defects of some of the unsatisfactory types still in use. In the case of w.c. apparatus, the advancement in the last fifty years had been most marked, and the modern wide water area wash-down closet was the outcome of much experimental work. The various types of joint in use were discussed, after which the lecturer dealt with sinks, lavatories, baths, and the waste pipes and overflows connected with each.

LEEDS AND WEST YORKSHIRE ARCHITECTURAL SOCIETY.

THE annual smoking concert in connection with this Society was held on Friday last week. Mr. Eric Morley, F.R.I.B.A., F.S.I., in the course of his presidential address, said he was quite sure the public was anxious to be instructed in the many vital things which constituted good architecture, and there were now a good many indications that the profession, as a whole, was at last beginning to take some action in helping them. In London and elsewhere the public were already evincing a growing interest. The recently opened County Hall had aroused a spirit of criticism far beyond expectation, and the recent decision to reconstruct and to erect additional stories over the Bank of England had created abnormal interest in the City. Whether those building schemes were generally approved or not, however, was of less importance to themselves than the growing evidence that the indifference of the public towards their art was being gradually dissipated and was being replaced by a keen definite opinion.

They might confidently hope that people were now beginning to realise the value of sound work, and to appreciate what banks, insurance companies, and some of the multiple shops had known for some time, that a building of distinction to its owner was a definite business asset, because of the attention it aroused amongst the buying public. But the man who received from his architect a building of character, besides creating that interest and enlarging his own business connections, conferred benefits on his fellows more than he knew, for no man could be content with a dull and uninteresting building for his own when its near neighbour was one of beauty and distinction, and it was inevitable in the end that further good building would result. That evidence of a wider interest in architecture on the part of those not actually engaged in the practice of it should be a great help and encouragement. They could not surely afford to neglect it, but should rather stir themselves to increased and effective effort, and see that that same newly-discovered interest was stimulated and extended.

A society like their own had many opportunities, and by seeking the co-operation of the Press should help the public considerably; once they got them to appreciate architecture, it should of necessity follow they would begin to appreciate architects themselves. If they equipped themselves to meet the new conditions which the commercial spirit of the age demanded then the architect's rightful position would surely be maintained. He felt they must adopt a more aggressive policy, and by anticipating the inevitable developments in construction and design they must convince the public that they had a real place in their lives, and that it was to the general well-being for them to be consulted. At present, the ordinary man in the street regarded an architect as a person who built suburban homes in a rather more attractive style than the average speculative builder, but at a considerably increased cost. Although any such idea appeared ludicrous to everyone in the profession, still there was no doubt that it existed, especially amongst persons who had never been concerned with the erection of a building at all.

Even amongst the more enlightened few there was existing a serious element of doubt as to what exactly an architect should be. Some of them were so professional, and so insistent on their rights and privileges, that their clients failed utterly to envisage the plane on which they moved, and were reluctant to consult them. Their not unnatural awe led them to the erroneous opinion that the probable fees for such very professional services must certainly be beyond their means. Others of them were so ready to acquiesce where they might give their clients the benefit of their knowledge and experience, and so matter-of-fact and easy-going about everything, that their clients lost all respect for them and counted them little more skilled than themselves. Let them not allow it to be forgotten, however, that architecture, as such, was not so simple a matter that it could be learned as a side-line by a person who had spent the greater part of his life in qualifying in a different business altogether; that an architect, in most cases, at any rate, acquired in the course of his training and practice a skill and dexterity in planning which could not be obtained elsewhere. That was the foundation on which architecture was built, and persons affecting to be architects, without that gift, had been trained in the wrong school from the very start. There was, then, a challenge to each one of them, by avoiding professionalism on the one hand and a benevolent neutrality on the other, to interest the public in their work; to convince them that they were there to assist progress and not simply to enjoy themselves by designing enrichments and embellishments which the builder or structural engineer might find beyond his powers. A tactful caution was essential, however, in approaching the public, for they had one or two deeply-rooted opinions regarding architects.

It was important for them, in giving estimates, to err rather on the right side for the client than on the wrong. It was true, of course, in many cases that the client was himself responsible for extras, either by understating his requirements at the start, or by changing them as the work proceeded. Perhaps some architects placed too high a value on their art. He submitted that the future of the profession depended equally on their business ability.

The distribution of the Society's prizes followed, the successful competitors, who are all past or present students of the Architectural Department, Leeds School of Art, being as follows:—Measured Drawings (Society's Silver Medal): Frank Chippendale; Essay Prize: R. G. Easdale; Architectural History Prize: C. R. Hill; Design Prize: 1st, H. Conolly, 2nd G. W. Alderson; the Nicholson Prize: T. R. Shaw.

THE WEEK IN PARLIAMENT.

WESTMINSTER, *Wednesday.*

The new Parliament assembled on Monday, November 20, and was opened by the King on Thursday, November 23.

During the debate on the motion for the presentation of an address of thanks in reply to the Speech from the Throne, Mr. Ramsay MacDonald, the new leader of the Labour Party, raised the question of the Rent Restriction Act, and asked if it was intended to introduce legislation on the subject. Mr. Bonar Law, the Prime Minister, replied that a Committee had been appointed to consider the matter and he had not yet received its recommendations; whether it would suggest anything which could be done in the present session he could not tell, but he would take care to give plenty of warning.

In the course of the same debate, questions were put as to the new Government's housing policy. Lady Astor said she fought against the last Government and would fight against the present one unless they had a progressive housing policy.

Major Atlee, a Labour member, said that the result of the census showed that in the Stepney district alone there were 600,000 persons living in one-room tenements. At present the country was supporting out of public funds some 100,000 men in the building trade who were not allowed to build, and who were actually being paid not to build. We were almost following the bad example of the London County Council, who got out a housing scheme and then paid the contractors a sum of money in respect of every house which they did not build.

Mr. Wheatley alleged that private enterprise was private robbery, and had forced up the price of houses so much that the Government had been compelled to stop building. It was not private enterprise, however, that had now brought prices down.

The Labour Party put down an amendment to the motion for the presentation of an address, regretting that no proposals have been submitted in the King's Speech for dealing with the extraordinary shortage of dwelling-houses throughout the country.

Cost of Housing Schemes.

Mr. Trevelyan Thomson asked the Minister of Labour if he would state the actual costs, so far as they are available, of all houses built under the Government's various housing schemes, and the average price paid for each house.

Sir Montague Barlow replied that according to a return which had recently been furnished by local authorities who were carrying out housing schemes, the average all-in expenditure on houses for which contracts had been made would work out at approximately £1,090 a house. The final settlements of costs which had been made to date related only to small schemes covering only 11,000 houses. The average cost of building in these cases, exclusive of land development, professional fees and expenses, worked out at £908 a house.

Rent Restriction Act.

Mr. W. Thorne asked whether the Government intended dealing with the Rent Restriction Act, and were they aware that the Manx legislature had passed an Act to extend for a further two years the Rent Restriction Act and to reduce the increased rentals of 50 per cent. above the pre-war figure to 20 per cent.?

Sir Montague Barlow said that he was aware of the action taken by the Manx legislature. The Government proposed to re-appoint the Departmental Committee set up by the late Government to inquire into the steps which should be taken to amend or extend the present Rent Restriction Act.

Housing Needs.

Mr. Trevelyan Thomson asked the Minister of Labour, as representing the Ministry of Health, whether, seeing that according to the official returns made by local authorities in 1919, after taking a survey of their housing needs as provided by the Housing Act of 1919, over 800,000 houses were then required to remove existing overcrowding, and that only about 200,000 houses had yet been built, he would state what steps the Government proposed to take to remedy the continued existence of overcrowding.

Sir Montague Barlow replied: My right hon. friend can only say that the whole question of future housing policy is receiving his careful consideration.

Office of Works' Policy.

Sir J. Baird (First Commissioner of Works) stated, in answer to Mr. Ponsonby, that the question of providing houses to meet local needs was one for the local authorities, and the Office of Works had no power to erect houses for this purpose.

Cost of Government's Housing Scheme.

Major Boyd Carpenter (Parliamentary Secretary to the Ministry of Labour) informed Sir A. Holbrook that it was estimated that the commitments under the Assisted Housing Schemes of the late Government, including slum clearances, would amount to £9,900,000 per annum, of which £9,100,000 per annum would be borne by the Exchequer.

Terra-Cotta Clay Discovery.

A correspondent of the *Western Mail* writes that extensive deposits of terra-cotta clay of the quality necessary for making high-class bricks, tiles and pottery have been found by experts on the estate of Shian, in the Benderloch district of Argyll, lying east of the island of Lismore. The clay has been tested by several manufacturers, who declare it is the finest brick earth of the class obtainable.

THE BUILDING TRADE.

BUILDING AND BUILDING CONTRACTS.

THE third public lecture of the Northern Polytechnic Institute (Department of Architecture, Building and Surveying), was given by Mr. F. J. Gayer, F.I.O.B. (Past-President of the London Master Builders' Association and Vice-President of the Institute of Builders).

Mr. Gayer commenced his lecture by pointing out some of the difficulties London builders encountered, either from idiosyncrasies of those in authority, the difficulty in some cases of convincing a building-owner that it was to his interests to employ an architect and a surveyor, or from certain stringent clauses in a building contract, all of which, he said, tended to destroy the value of organisation and to cause, in many cases, serious financial loss.

He then traced in detail the progress and routine of building work, from the invitation to tender to the completion of the work and the final settlement of accounts. Upon receipt of the necessary bills of quantities, the builder would, he said, seek quotations for certain materials. He would make certain that the quotations were all "delivered to site," or would add to the quotations any railway carriage, cartage, &c., before incorporating them in the items in the bills of quantities.

For the accurate framing of an estimate, great experience of detailed and analysed costs was required. The successful estimator was one who had taken careful records of labour costs, covering capacities, wastage, shrinkage, and consolidation of materials. By reason of the highly technical nature of the work, there might be room for some small differences of opinion, based on varying records, but there was certainly no justification for the extraordinary differences that were occasionally revealed in tender lists. Those points clearly pointed to the great need for more research and the publication of more reliable data.

During the execution of building work it was suggested that clear records should be kept of all materials sent to a specific contract, in order that they could be used as a rough check on the bills of quantities. By that means any variation could be readily noted and the way paved for an equitable adjustment at the completion of the contract. The timing of the arrival of materials in logical sequence was one of the great points of practical organisation, and one that needed very special attention, since failure in that direction would frequently be the cause of loss to the builder. There were two systems in operation with regard to maintaining contact between the office and the works—one system being the employment of a "walking foreman," or works superintendent; and the other, the passing of the responsibility of that work to the estimator. The latter system was the better, since it placed the estimator in a much better position for settling the variation account, and, incidentally, gave the estimator an opportunity of adding to his practical knowledge, at the same time assisting the general foreman with the more theoretical side—a combination which undoubtedly produced the best results.

Labour, as a very big factor in building organisation, naturally came under review. Overtime could now only be worked by permission of a joint committee of employers and operatives, a system which at times proved rather irksome, and, moreover, would appear to be totally unnecessary since no federated employer might work overtime without paying additional rates, from 25 per cent. to 100 per cent., for time so worked—rates which would appear an adequate safeguard against an employer working his operatives too many hours unless the circumstances justified the extra hours with the consequent extra payment. The present hours of labour were unreasonably short, and deprived the operative of a means of adding to his wages without in any way causing hardship to the worker. The present working hours were as unreasonably short as they were unreasonably long in the last century.

With the question as to whether or not the quantities should be incorporated as part of the contract, the lecturer said there was only one fair system, and that was that the quantities which had been used in arriving at a tender price should be included as part of the contract. That course had the virtue of granting the builder payment for any work not included in the quantities, and in a like manner an omission for any work included in the quantities but not executed.

Reference was made to public and other bodies who endeavoured to use their own special form of contract and ignore the standard form which had been agreed between the R.I.B.A., the National Federation of Builders, and the Institute of Builders. Those independent forms of contract were, he said, generally "models of iniquity," and it was difficult to understand why documents which were the production of one man or of one public body should be preferred to those which had been produced after long deliberation by all interested parties and upon which reasonable agreement had been reached. Sub-contracting clauses of the standard form of agreement were also dealt with, and the difficulties encountered under that head pointed out.

Arbitration was referred to as being infinitely more satisfactory than the courts when dispute arose, since most of the clauses would naturally be of a highly technical nature. Labour disputes, when on the works of a federated builder, had been reduced to a minimum through the conciliation schemes in operation between the employers and the operatives.

Many questions were asked by members of the audience, and the vote of thanks to the lecturer was put by Dr. R. S. Clay, B.A., B.Sc., from the chair, and carried unanimously.

The next paper will be read by Mr. R. R. Butler, B.Sc., A.C.I.C.S., on "Composition and Jointless Flooring," at 7 p.m., on December 7.

COMPARISON OF PRICES OF BUILDING MATERIALS BETWEEN AUGUST 4, 1914, AND NOVEMBER 30, 1922.

Material.	Aug. 4, 1914. £ s. d.	Nov. 11, 1918. £ s. d.	Oct. 31, 1922. £ s. d.	Nov. 30, 1922. £ s. d.	Rise or Fall in Last Two Months. (Per cent.)
Bricks—					
Best Stocks	1 16 6	3 3 6	4 2 0	4 2 0	—
Flettons	1 14 0	2 7 8	3 1 0	3 1 0	—
Glazed	13 0 0	17 17 6	22 0 0	22 0 0	—
Thames Ballast	5 9	17 0	13 6	13 6	—
Thames Sand	7 3	17 0	16 6	16 6	—
Shingle (¾ in.)	—	15 0	14 0	14 0	—
Portland Cement	1 17 0	3 8 0	3 3 0	3 3 0	—
Ground Blue Lias Lime	1 0 0	2 2 6	2 18 6	2 18 6	—
Grey Stone Lime	14 0	2 7 0	2 16 6	2 16 6	—
Bath Stone	1 7½	1 7	3 1	3 1	—
Portland Stone	2 4½	2 10½	4 7	4 7	—
Good Sound Building Timber—					
4 in. ×11 in.	16 10 0	53 0 0	36 0 0	36 0 0	—
3 in. × 7 in.	13 0 0	46 0 0	22 10 0	22 10 0	—
3 in. ×11 in.	15 0 0	50 0 0	32 10 0	32 10 0	—
2 in. ×11 in.	—	51 0 0	32 10 0	32 10 0	—
2 in. × 7 in.	—	46 0 0	22 10 0	22 10 0	—
3 in. × 4 in.	—	—	20 10 0	20 10 0	—
Slates—					
24 in. ×12 in.	—	—	41 17 0	41 17 0	—
22 in. ×12 in.	—	—	34 0 6	38 0 6	—
R. S. Joists	9 10 0	—	13 0 0	13 0 0	—
Iron—					
Common Bars	9 0 0	16 10 0	12 10 0	12 10 0	—
Mild Steel Bars	9 5 0	21 0 0	12 0 0	12 0 0	—
Steel Bars	9 5 0	19 10 0	12 0 0	12 0 0	—
Cut Nails	11 10 0	29 0 0	21 10 0	21 10 0	—
Sheet Lead	22 15 0	40 0 0	35 10 0	35 10 0	—
Glass—					
15 oz. Sheet	2	7	2¾	2¾	—
21 oz. ,,	3	8	4¼	4¼	—
26 oz. ,,	3¾	9	5¼	5¾	—
Raw Linseed Oil	2 4	8 4	3 11	3 7	—8.51
Turpentine	2 6	11 0	10 5	9 10	—5.60
Ground English White Lead	30 5 0	60 10 0	55 5 0	55 5 0	—
White Lead Paint	—	83 10 0	77 10 0	77 10 0	—
Red Lead	28 10 0	47 0 0	39 0 0	39 0 0	—

NEW BRIDGE, WELLESLEY ROAD, CHISWICK.

The Chiswick Urban District Council has recently completed a ferro-concrete bridge somewhat different from the usual design. The external abutments and wing walls are in brickwork; the central supports consist of five cast *in situ* ferro-concrete columns, and the floor is composed entirely of pre-cast ferro-concrete with cast *in situ* connections over the points of support.

The whole structure was tested on November 21, in the presence of representatives of the Middlesex County Council and the London and South Western Railway, by the engineer, Mr. Edward Willis, M.Inst.C.E., F.S.I. Messrs. L. G. Mouchel & Partners have been associated with the engineer in the design of the bridge. The test load adopted consisted of three road rollers and four heavily-laden wagons, making a total of 83 tons 8 cwts. live load on a single span of 38 ft. 2 in., the total width of the bridge being 50 ft. with a 32 ft. carriageway. The maximum deflection in relation to span only amounted to 1/8375, whilst the permanent set was only one-sixty-fourth of an inch. This result, with a permissible deflection of 1/600 of the span, speaks well for the design and carrying out of the work.

Messrs. Davidson & Sykes, Ltd., were the contractors; and Mr. R. J. Williams, the clerk of works

BUILDING SURVEYORS' AND INSPECTORS' ASSOCIATION.

AT a general meeting of this Association held recently at the Liverpool Technical School, Byrom-street, the Chairman, Mr. W. J. Stone, M.R.S.I., of Bootle, is introducing the lecturer, made reference to the proposed examination scheme, scales of salaries for the technical and professional services, as finally drafted by the Joint Consultative Committee of the N.A.L.G.O. He hoped that these would be finally approved early next month.

MR. WALTER PERCIVAL, Grissell Prizeman and Gold Medallist, R.I.B.A., then gave a paper on "Triangulation in Roof Construction and the Re-formation of an Old Iron Room." He said the building in question was a market hall, the plan being a rhomboid and roofed in three bays, two of 54 ft. span and one varying from 56 ft. to 45 ft., the ridge length in No. 1 bay being 248 ft.; in No. 2 bay 210 ft.; and in No. 3 bay 175 ft., covered with slates on the lower slopes. The upper portion consisted of raised woodwork framing forming a continuous lofty lantern, having slightly sloping sides, and crowned with a slated roof, the central bay being raised about 10 ft. above the two outer bays; this arrangement gave a very fine lofty appearance and allowing a range of clerestory windows which improved both the lighting and ventilation. The roof was formed of trusses of the queen rod type without being carried to an apex, made up of wrought iron and cast iron, wrought iron being used for the principal rafters and tension members, and cast iron for the struts. There was a continuous wood spacing piece between the two angles forming the principal rafter, which was, perhaps, somewhat objectionable. The pitch or rise of roof for the covering was satisfactory and the spacing of the trusses much closer than would be adopted in carrying out similar work at the present time. The span of 54 ft. was not an unreasonable one; the ironwork was in an excellent state of preservation, and well put together on the pin joint principal. The ironwork was unquestionably of cold blast quality.

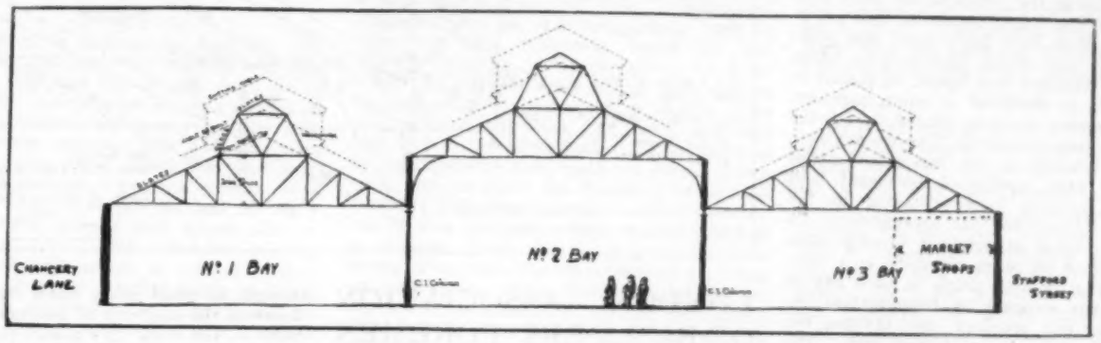
Notwithstanding so many good points to be found, there were serious defects in the design which required to be tackled if one could only do so. It was with this object in view that he (the lecturer) took up the question in earnest, and, he ventured to say, brought the same to a successful issue. Owing to the defects in design of the trusses, the twisting and distortion were simply alarming, and, ultimately, one bay of the market hall had to be closed to public use, causing great inconvenience both to the trade and the public. Some considerable time was spent in investigating the behaviour of the trusses under their then conditions of fixing, and in no instance was any defect found to be due to either horizontal or vertical stresses excepting at the head of the queen member and in the part trusses at each gable end of the market hall, which were necessitated through an angular site, and that, in the latter case, he had no hesitation in saying, was due to the trusses at those positions not being complete frames. Precisely the same thing would happen with any type of truss if incomplete in any part of the frame, or, in other words, not self-contained. If, in the part trusses, the diagonals and vertical tension members had been made capable of taking both compression and tension strains, that, he submitted, would have prevented the distortion in those members which had to be dealt with at that time.

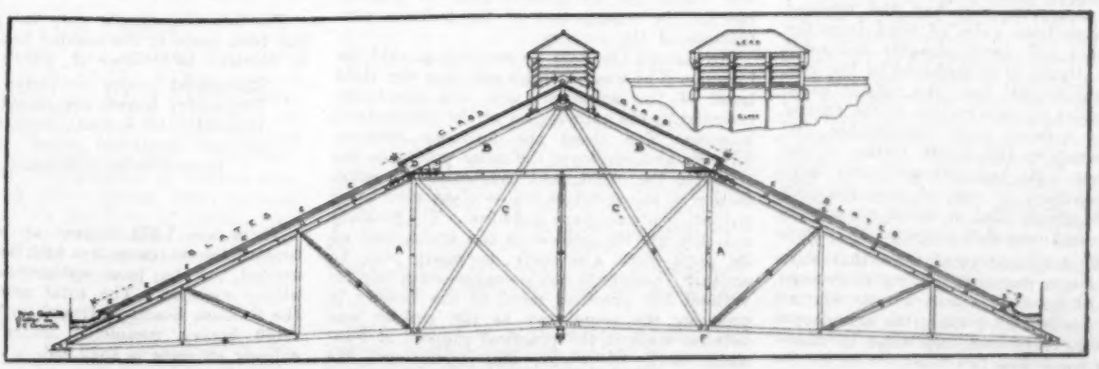
It was, of course, always best to have a self-contained frame, but if that was not possible, other means must be adopted to meet the case, *e.g.*, members made capable of taking either tension or compression. The distortion of the trusses in parts of the roof, more especially in bay No. 3, where the span varied from 56 ft. to 45 ft., and in which the apex and foot of trusses were fixed level, rendering it necessary for each truss to be made slightly different to accommodate itself to the span and slope, the lecturer was satisfied it was not due to any defect in the members of the frame forming the truss other than at the head of the queen member previously mentioned. He did not doubt that that was the first thought occurring to one on looking up at the roof, but a closer inspection disclosed that to be crosswinding in the trusses, and could either have taken place in the original fixing or some time afterwards if sufficiently braced in a lateral direction. He thought in that case it was partly due to both causes.

The fact of the trusses doing their work in such a crosswinding position in the roof without any member failing, must be due to an excess of strength somewhere, and since the section of some of the members in the truss was somewhat small in comparison to what would be used to-day, it certainly seemed to indicate a good quality of material, otherwise the members would have failed on account of the cross strains to which they have been subjected, and which were certainly never calculated and provided for in the designing of roof work. He made a careful analysis of the stresses in the truss and ascertained the following results: The pin or bolt at the foot of truss had been subjected to such a severe strain that the factor of safety has only been 1.90 and the principal rafter a factor of safety of 2.88 as against a factor of safety of 4.00 required by the Board of Trade for iron structures carrying dead loads. All other members had apparently had satisfactory factors of safety.

The most important alteration was to abandon the raised lantern and to continue the slope of the lower part of roof to apex, that arrangement alone reducing the loading on the trusses something like 30 per cent. The stress in the principal rafter under the new conditions of loading being reduced to such an extent that that member would have a factor of safety of 4.00 as against 2.88 hitherto. The factor of safety in the foot pin would be increased to 2.50 as against 1.90 before, but as that could not be considered to be sufficiently satisfactory it was decided to put in an additional pin at the foot of alternative trusses. The factor of safety of the other members, which hitherto had been satisfactory, would also be raised considerably under the new conditions of loading.

It would be interesting at that stage to examine the defects through which he attributed the partial failure of trusses at the head





A Market Hall Roof.

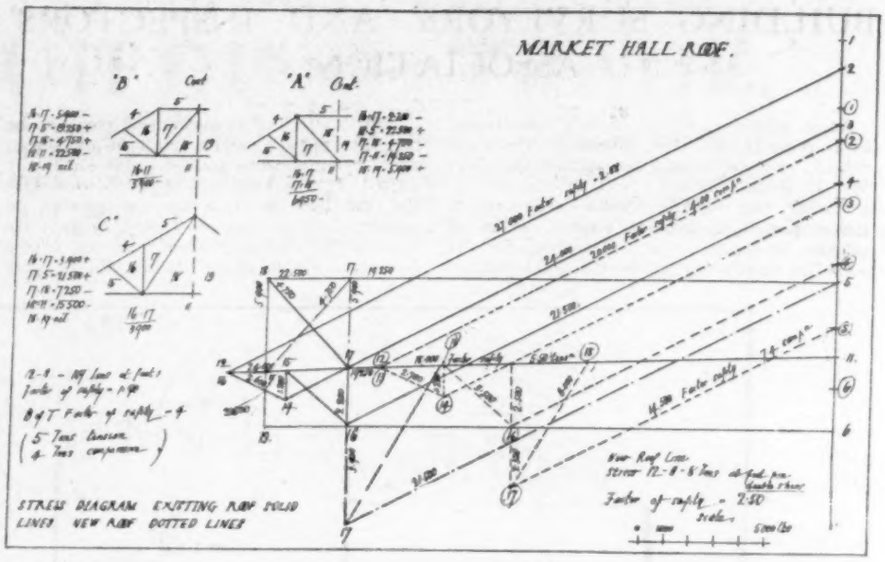
of queen members. Taking firstly the existing method adopted of triangulating the space between queen members, as indicated in diagram A, the stress in tension at head of queen was found to be 7,000 lb.; secondly, in diagram B, the stress amounted to 5,900 lb.; thirdly, in diagram C, the method adopted in the reformation of truss caused no tensional stress whatever, but, on the other hand, actually supported the principal rafter as a strut.

At that time, with the exception of the roof covering, there was only a lateral stay at one point provided in the centre of the truss midway between the queen members, thus allowing movement to take place from that point as a centre, and which had actually taken place. To overcome that defect, he placed an angle section at the head of queen members and a T section member jointed up at the foot pin of queen members. The trusses were then fixed laterally at the two points about which they were capable of movement, and which had hitherto never obtained in the roof. In addition to that arrangement, he adopted a method of diagonal bracing from above the head of queen members in a horizontal position in four places in each bay of the roof, thus securing by triangulation extending over two spacings two trusses, the intermediate truss being passed over. The effectiveness of that arrangement proved most satisfactory.

The slope of the lower portion of roof was continued up to ridge by adopting a T section for that purpose, and by cutting away the web at foot, the table was made to extend over the existing principal rafters alternately throughout the roofs and pinned thereto, and by means of a shaped gusset plate pinned on top of straining member. Then, by means of a diagonal flat bar, the apex of rafters was connected to foot of queen members, the double members of flat bar section forming the queens, being adapted to compressive force by being blocked out with three spacing pieces made out of gas tubing 3 in. wide in the middle position and ½ in. bolts, three to each member. The extended T section rafter, 5 × 3 × ⅜, was secured to the existing rafters by means of 2 No. ½ in. bolts and nuts on each side thereof (4 in all), and by means of a shaped gusset piece ⅜ thick, with 2 × ⅜ angle on each side of T, immediately over queen rod, with 5 No. ½ in. bolts and nuts to secure same, and fixed to horizontal member with 2 No. ½ in. bolts and nuts on each side (4 in all). The diagonal flat bar 3 × ⅜ was secured to apex by means of a gusset plate ⅜ thick each side of web of T, and secured by 4 No. ½ in. bolts and nuts, the diagonal being connected at head and foot with a ⅞ in. bolt and nut. That alteration in the framing of the truss at once converted it from an ordinary queen type truss to a complete triangular frame, thereby giving it considerably greater strength at a comparatively small cost.

It was recommended that the building be re-covered upon its present sectional arrangement, maintaining the existing elevated central bay, the brick walls of which were good, and, moreover, that bay had received such protection from gales of wind from the side bays that had unquestionably accounted for the less degree of disturbance of the roof trusses in the central bay, the outside bays, although similar in construction to the central bay, having suffered such considerable disturbance owing to the direct action of the wind on them. He had estimated that there would be a saving in cost of approximately one-third as against that of entire reconstruction such as had been first proposed by others.

Notwithstanding additional costs that were incurred through the work having to be carried out without interruption to the market other than one bay at a time, the actual cost was not more than one-half what it otherwise would have been.



LONDON ASSOCIATION OF BUILDERS' FOREMEN AND CLERKS OF WORKS.

THE annual dinner in connection with the London Association of Builders' Foremen and Clerks of Works, of which Mr. E. J. Harsant is President, took place at the Holborn Restaurant on Saturday evening last, Major A. F. Vigor, of Messrs. Arthur Vigor, Ltd., Knightsbridge, presiding over an excellent attendance.

In proposing the toast of the Association, the Chairman enumerated its objects. With regard to the Unemployment Fund—a recent venture—the results, he said, showed that it filled a long-felt want. The Pension Fund, of course, made the biggest call upon the finances of the Association, and they depended for the scope of the fund on the money they collected. The fund was established in 1904, and at the present time was providing for three members and twelve widows at an annual cost of £321. The Association itself was in a healthy and flourishing condition, the membership being approximately 440.

The President briefly responded.

Mr. G. H. White, the secretary, mentioned that the sum of £145 had been collected in donations this year.

Sir F. Baines, C.B.E., M.V.O., in submitting "The Building Trade," urged that all sections should strive for unified action in developing the industry on modern lines. There was no industry greater than the building industry other than agriculture, but he hoped the building trade would not be as bad as agriculture. That would be a disaster to this country; it was important that the industry should move forward. Its future depended upon the co-operation and influence of every member and the most obscure could administer a great fillip. The great work which was done in this country during and immediately after the war would not have been rendered possible but for the organisation of the building contractors of the country.

Mr. Roland Chessum, in responding, said the foreman, if he was worth his salt, was the right hand of the employer, and was absolutely essential to the carrying on of the contractor's business. The closer the intimacy between foreman and employer the more profitable the result to the client, and the better the satisfaction to the architect, whose ideas were being put into concrete shape and form. The building industry was the noblest in the world, and all its parts were absolutely necessary one to another; architects and surveyors were helpless without the practical mind of the builder in precisely the same way as the builder was helpless without the practical support of foreman, clerk of works, and operatives. He thought he could safely claim that it was the desire of the majority of builders to give good value in the work they contracted for. As to the future of the trade he wished he could be optimistic, but what was the use of prophesying? He did say, most emphatically, that he could see no hope for the building or any other industry unless everybody recognised that the only thing that was going to pull this country out of the rut was work.

Mr. E. J. Brown proposed "The Architects and Surveyors," and said that builders were now studying closer relationships with architects—they were discussing a new form of contract. He marvelled at the genius possessed by architects as a whole, and complimented the particular architect by whose side he had sat that evening (Mr. Ralph Knott) on the wonderful exhibition they saw when they looked across the water. It would appear that Mr. Knott could not have carried out his great work without the quantity surveyor; it was to be hoped the quantities were full. But he had heard a whisper that perhaps there were no quantities at all, that it might have been done by a schedule.

Mr. Ralph Knott, F.R.I.B.A., and Mr. H. T. A. Chidgey M.B.E., responded. The latter said his mission in life was to keep builders in order, and he had pursued this in Whitehall as elsewhere. The builders had done very well for themselves, but he was not sure but what under the circumstances they had done very well for the country also. We might talk about extravagant prices, but many things had made those prices soar.

The toast of "The Visitors" was proposed by the Vice-President and responded to by Mr. E. Baralet, and that of "The Chairman," submitted by Mr. B. Carter, was acknowledged by the chairman.

Housing Progress in Scotland.

The following figures show the progress that has been made in State-aided housing schemes in Scotland to October 31, 1922:—

Permanent houses completed	12,144
Temporary houses completed	665
Reconstructed houses completed	89
Houses completed under the Private Subsidy Scheme	2,160
	15,058

There are 7,631 houses at present under construction in connection with housing schemes carried out by local authorities and public utility societies. The total amount paid by the Scottish Board of Health in respect of the 2,160 houses completed under the private subsidy schemes is £522,936.

INSTITUTION OF STRUCTURAL ENGINEERS

CONCRETE IN RAILWAY WORK.

AT a meeting of the Institution of Structural Engineers (formerly the Concrete Institute), held at 296, Vauxhall Bridge-road, S.W.1, on November 16, MR. W. MARRIOTT, M.Inst.C.E., read a paper entitled "Concrete on British Railways," in which he dealt with several aspects of the uses of concrete in railway work.

Bridges.

In referring to bridges, he said the only difficulty they had had with concrete had been that when they had had to pull down buildings, etc., for enlargement, so solid and sound were the structures that they were very difficult to remove, and the fact had also been noticed that the joists where they had been covered or embedded in concrete were as good as the day they were put in, and in many cases had even got the mill bloom still on them. Since those days, whenever permissible, he had built scores of bridges of concrete, using, however, a brick facing as being cheaper than shuttering, and even going so far as to build in lime concrete, with excellent results, as was proved when one of these bridges near Cromer had to be taken down recently, the lias lime being as hard as a rock.

The use of pre-cast reinforced concrete in bridgework also offered many opportunities for economical construction. It was quite possible, and the writer had done so, to make concrete girders for short spans complete and ready to lift into place. In other cases, where the steel girders were encased in concrete, the floor system was economically made of arch blocks. These arch blocks were pre-cast, and could be run into place as fast as men could handle them. They were then covered up with concrete *in situ*, and trains could be, and had been, run over within 24 hours. They formed a bridge floor which was economical in first cost, and also in maintenance, especially where trains were continually running underneath, no temporary woodwork or centering was required, and a good coat of lime white every now and then was all that was necessary for the sake of appearance.

There were many ways of designing bridge floors. Some engineers preferred a flat slab. The speaker considered that the arch was more scientific and economical.

Fence Posts.

He had started in some trepidation to design concrete fence posts, but these were tested with such satisfactory results that many miles had been put up with great success. They were considerably lighter than the standard type of some large railways, and consequently a good saving was effected. The Great Northern Railway had adopted a similar post with every success. The next step was to make a straining post, and in that he was not successful at first. To get a straining post to stand the strain of eight wires tightly strained up meant a huge post, more than men could lift about, so he set himself to find a solution of that difficulty. It was not everyone, perhaps, who realised the severe strain that could be brought to bear upon an end straining post. In trying many different types of reinforcement, it was found that the "Warren" type of bracing gave the best results for a minimum size post. That type of bracing was then adopted in various reinforcements, and tested beside other systems of reinforcement in the form of beams, etc., and in every case gave better results, even when only tied, and when welded the result was incomparably in favour of the "Warren" type.

Signal Posts.

He adopted the system for signal posts and erected the first post, 20 ft. high, in July, 1915. In March, 1916, we had the memorable blizzard, but the post, though unguyed, took no harm whatever. There were scores of trees just behind it that went down like nine-pins, as did also telegraph posts for many miles. The system had been developed, and posts were now made up to 49 ft. long. Most of the principal railway companies had a large number, and two lines, at least, had adopted them as standard, which went to strengthen the statement made by Mr. W. W. Grierson, in a paper before the Institution of Civil Engineers and at the Congress at Rome, that the posts were a success. One of the chief difficulties had been, and was still to-day, the education of the erectors, as in his experience men could not expect a concrete post to stand the throwing about that a timber post would stand, or the deflection, but it was plain that many posts had had to undergo rough usage. A great point in favour of concrete was that, once the post was up and sound, there would be no further expense on maintenance, and its life should be unlimited. One important factor was that unless the concrete was made waterproof the consequent corrosion of the steelwork arising from the permeating moisture might cause the concrete covering of the metal, where too thin, to burst off. He had spent much time in experiments and had found a simple remedy. Cement concrete could be made impermeable by exercising due care in selecting the concrete aggregate, especially the sand, but as suitable aggregate was not always obtainable in actual practice, other means might be, therefore, at times necessary. The best method was doubtless to use a concrete which was waterproof in itself, and in which the reinforcement was protected by a sufficient thickness. He always aimed at a minimum covering of 1 in. for posts or poles. For wrought work, like signal posts, which usually were painted, concrete could hold its own as to cost.

Sleepers.

The chief difficulty to be overcome in a satisfactory concrete sleeper was the lack of elasticity, and there were many points of importance to be taken into consideration in designing sleepers, a few of which were:—

(1) The continuous repetition of impact to withstand which resilience was necessary, as well as first-class concrete, excellent reinforcement, and the best workmanship.

(2) Constant impact consolidated the sleeper bed, so that there was a tendency for the sleeper to become unevenly bedded, and it might even ride on its middle point. The top then got severe tension strains. If the track was trenched in the middle to avoid this the trench must not be made too wide, otherwise the effect would be reversed with equally unsatisfactory results, as experience had proved.

(3) The bearing area to ensure proper distribution of load required consideration.

(4) The weight of the sleeper required to be kept as low as possible, which, therefore, limited the design and the strength.

(5) Maintenance men were somewhat prejudiced, and required to be trained in the management of this new kind of sleeper.

(6) Concrete sleepers were expensive, and would be so until a satisfactory type was produced, when they would be manufactured in bulk and the cost consequently reduced.

(7) Many of the best known sleepers were too lightly reinforced; others, notably the Italian, were over-reinforced, consequently cutting the concrete up into too small sections.

They had to go some distance yet before concrete sleepers could be said to be entirely satisfactory, but there were many entirely satisfactory replacements of timber in signal fittings, compensator frames, and general work, etc., where the carpenter could be completely eliminated; also in window frames, which was certainly one of the most economical items, being much cheaper than wood and most efficient, and equally suitable for wood or iron casements. Another satisfactory product was name boards. The method of manufacture was somewhat novel, there being three colours of cement. The border was ordinary grey cement, the plate was of white cement, and the letters are black or red, or the colours of the board and lettering might be reversed. The letters were made separately, half the thickness being buried in the board and the other half standing out.

Cements.

They had all, he trusted, high ideals, and perhaps he might be forgiven if he gave briefly what his ideals were:

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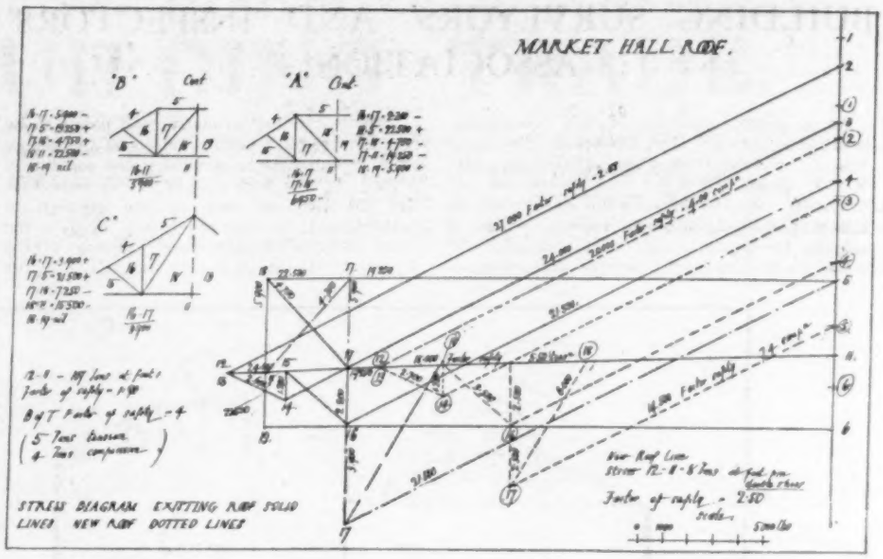
of queen members. Taking firstly the existing method adopted of triangulating the space between queen members, as indicated in diagram A, the stress in tension at head of queen was found to be 7,000 lb.; secondly, in diagram B, the stress amounted to 5,900 lb.; thirdly, in diagram C, the method adopted in the reformation of truss caused no tensional stress whatever, but, on the other hand, actually supported the principal rafter as a strut.

At that time, with the exception of the roof covering, there was only a lateral stay at one point provided in the centre of the truss midway between the queen members, thus allowing movement to take place from that point as a centre, and which had actually taken place. To overcome that defect, he placed an angle section at the head of queen members and a T section member jointed up at the foot pin of queen members. The trusses were then fixed laterally at the two points about which they were capable of movement, and which had hitherto never obtained in the roof. In addition to that arrangement, he adopted a method of diagonal bracing from above the head of queen members in a horizontal position in four places in each bay of the roof, thus securing by triangulation extending over two spacings two trusses, the intermediate truss being passed over. The effectiveness of that arrangement proved most satisfactory.

The slope of the lower portion of roof was continued up to ridge by adopting a T section for that purpose, and by cutting away the web at foot, the table was made to extend over the existing principal rafters alternately throughout the roofs and pinned thereto, and by means of a shaped gusset plate pinned on top of straining member. Then, by means of a diagonal flat bar, the apex of rafters was connected to foot of queen members, the double members of flat bar section forming the queens, being adapted to compressive force by being blocked out with three spacing pieces made out of gas tubing 3 in. wide in the middle position and ½ in. bolts, three to each member. The extended T section rafter, 5 × 3 × ⅜, was secured to the existing rafters by means of 2 No. ½ in. bolts and nuts on each side thereof (4 in all), and by means of a shaped gusset piece ⅜ thick, with 2 × ⅜ angle on each side of T, immediately over queen rod, with 5 No. ½ in. bolts and nuts to secure same, and fixed to horizontal member with 2 No. ½ in. bolts and nuts on each side (4 in all). The diagonal flat bar 3 × ⅜ was secured to apex by means of a gusset plate ⅜ thick each side of web of T, and secured by 4 No. ½ in. bolts and nuts, the diagonal being connected at head and foot with a ⅞ in. bolt and nut. That alteration in the framing of the truss at once converted it from an ordinary queen type truss to a complete triangular frame, thereby giving it considerably greater strength at a comparatively small cost.

It was recommended that the building be re-covered upon its present sectional arrangement, maintaining the existing elevated central bay, the brick walls of which were good, and, moreover, that bay had received such protection from gales of wind from the side bays that had unquestionably accounted for the less degree of disturbance of the roof trusses in the central bay, the outside bays, although similar in construction to the central bay, having suffered such considerable disturbance owing to the direct action of the wind on them. He had estimated that there would be a saving in cost of approximately one-third as against that of entire reconstruction such as had been first proposed by others.

Notwithstanding additional costs that were incurred through the work having to be carried out without interruption to the market other than one bay at a time, the actual cost was not more than one-half what it otherwise would have been.



LONDON ASSOCIATION OF BUILDERS' FOREMEN AND CLERKS OF WORKS.

THE annual dinner in connection with the London Association of Builders' Foremen and Clerks of Works, of which Mr. E. J. Harsant is President, took place at the Holborn Restaurant on Saturday evening last, Major A. F. Vigor, of Messrs. Arthur Vigor, Ltd., Knightsbridge, presiding over an excellent attendance.

In proposing the toast of the Association, the Chairman enumerated its objects. With regard to the Unemployment Fund—a recent venture—the results, he said, showed that it filled a long-felt want. The Pension Fund, of course, made the biggest call upon the finances of the Association, and they depended for the scope of the fund on the money they collected. The fund was established in 1904, and at the present time was providing for three members and twelve widows at an annual cost of £321. The Association itself was in a healthy and flourishing condition, the membership being approximately 440.

The President briefly responded.

Mr. G. H. White, the secretary, mentioned that the sum of £145 had been collected in donations this year.

Sir F. Baines, C.B.E., M.V.O., in submitting "The Building Trade," urged that all sections should strive for unified action in developing the industry on modern lines. There was no industry greater than the building industry other than agriculture, but he hoped the building trade would not be as bad as agriculture. That would be a disaster to this country; it was important that the industry should move forward. Its future depended upon the co-operation and influence of every member and the most obscure could administer a great fillip. The great work which was done in this country during and immediately after the war would not have been rendered possible but for the organisation of the building contractors of the country.

Mr. Roland Chessum, in responding, said the foreman, if he was worth his salt, was the right hand of the employer, and was absolutely essential to the carrying on of the contractor's business. The closer the intimacy between foreman and employer the more profitable the result to the client, and the better the satisfaction to the architect, whose ideas were being put into concrete shape and form. The building industry was the noblest in the world, and all its parts were absolutely necessary one to another; architects and surveyors were helpless without the practical mind of the builder in precisely the same way as the builder was helpless without the practical support of foreman, clerk of works, and operatives. He thought he could safely claim that it was the desire of the majority of builders to give good value in the work they contracted for. As to the future of the trade he wished he could be optimistic, but what was the use of prophesying? He did say, most emphatically, that he could see no hope for the building or any other industry unless everybody recognised that the only thing that was going to pull this country out of the rut was work.

Mr. E. J. Brown proposed "The Architects and Surveyors," and said that builders were now studying closer relationships with architects—they were discussing a new form of contract. He marvelled at the genius possessed by architects as a whole, and complimented the particular architect by whose side he had sat that evening (Mr. Ralph Knott) on the wonderful exhibition they saw when they looked across the water. It would appear that Mr. Knott could not have carried out his great work without the quantity surveyor; it was to be hoped the quantities were full. But he had heard a whisper that perhaps there were no quantities at all, that it might have been done by a schedule.

Mr. Ralph Knott, F.R.I.B.A., and Mr. H. T. A. Chidgey M.B.E., responded. The latter said his mission in life was to keep builders in order, and he had pursued this in Whitehall as elsewhere. The builders had done very well for themselves, but he was not sure but what under the circumstances they had done very well for the country also. We might talk about extravagant prices, but many things had made those prices soar.

The toast of "The Visitors" was proposed by the Vice-President and responded to by Mr. E. Baralet, and that of "The Chairman," submitted by Mr. B. Carter, was acknowledged by the chairman.

Housing Progress in Scotland.

The following figures show the progress that has been made in State-aided housing schemes in Scotland to October 31, 1922:—

Permanent houses completed	12,144
Temporary houses completed	665
Reconstructed houses completed	89
Houses completed under the Private Subsidy Scheme	2,160
	15,058

There are 7,631 houses at present under construction in connection with housing schemes carried out by local authorities and public utility societies. The total amount paid by the Scottish Board of Health in respect of the 2,160 houses completed under the private subsidy schemes is £522,936.

INSTITUTION OF STRUCTURAL ENGINEERS

CONCRETE IN RAILWAY WORK.

AT a meeting of the Institution of Structural Engineers (formerly the Concrete Institute), held at 296, Vauxhall Bridge-road, S.W.1, on November 16, MR. W. MARRIOTT, M.Inst.C.E., read a paper entitled "Concrete on British Railways," in which he dealt with several aspects of the uses of concrete in railway work.

Bridges.

In referring to bridges, he said the only difficulty they had had with concrete had been that when they had had to pull down buildings, etc., for enlargement, so solid and sound were the structures that they were very difficult to remove, and the fact had also been noticed that the joists where they had been covered or embedded in concrete were as good as the day they were put in, and in many cases had even got the mill bloom still on them. Since those days, whenever permissible, he had built scores of bridges of concrete, using, however, a brick facing as being cheaper than shuttering, and even going so far as to build in lime concrete, with excellent results, as was proved when one of these bridges near Cromer had to be taken down recently, the lias lime being as hard as a rock.

The use of pre-cast reinforced concrete in bridgework also offered many opportunities for economical construction. It was quite possible, and the writer had done so, to make concrete girders for short spans complete and ready to lift into place. In other cases, where the steel girders were encased in concrete, the floor system was economically made of arch blocks. These arch blocks were pre-cast, and could be run into place as fast as men could handle them. They were then covered up with concrete *in situ*, and trains could be, and had been, run over within 24 hours. They formed a bridge floor which was economical in first cost, and also in maintenance, especially where trains were continually running underneath, no temporary woodwork or centering was required, and a good coat of lime white every now and then was all that was necessary for the sake of appearance.

There were many ways of designing bridge floors. Some engineers preferred a flat slab. The speaker considered that the arch was more scientific and economical.

Fence Posts.

He had started in some trepidation to design concrete fence posts, but these were tested with such satisfactory results that many miles had been put up with great success. They were considerably lighter than the standard type of some large railways, and consequently a good saving was effected. The Great Northern Railway had adopted a similar post with every success. The next step was to make a straining post, and in that he was not successful at first. To get a straining post to stand the strain of eight wires tightly strained up meant a huge post, more than men could lift about, so he set himself to find a solution of that difficulty. It was not everyone, perhaps, who realised the severe strain that could be brought to bear upon an end straining post. In trying many different types of reinforcement, it was found that the "Warren" type of bracing gave the best results for a minimum size post. That type of bracing was then adopted in various reinforcements, and tested beside other systems of reinforcement in the form of beams, etc., and in every case gave better results, even when only tied, and when welded the result was incomparably in favour of the "Warren" type.

Signal Posts.

He adopted the system for signal posts and erected the first post, 20 ft. high, in July, 1915. In March, 1916, we had the memorable blizzard, but the post, though unguyed, took no harm whatever. There were scores of trees just behind it that went down like nine-pins, as did also telegraph posts for many miles. The system had been developed, and posts were now made up to 49 ft. long. Most of the principal railway companies had a large number, and two lines, at least, had adopted them as standard, which went to strengthen the statement made by Mr. W. W. Grierson, in a paper before the Institution of Civil Engineers and at the Congress at Rome, that the posts were a success. One of the chief difficulties had been, and was still to-day, the education of the erectors, as in his experience men could not expect a concrete post to stand the throwing about that a timber post would stand, or the deflection, but it was plain that many posts had had to undergo rough usage. A great point in favour of concrete was that, once the post was up and sound, there would be no further expense on maintenance, and its life should be unlimited. One important factor was that unless the concrete was made waterproof the consequent corrosion of the steelwork arising from the permeating moisture might cause the concrete covering of the metal, where too thin, to burst off. He had spent much time in experiments and had found a simple remedy. Cement concrete could be made impermeable by exercising due care in selecting the concrete aggregate, especially the sand, but as suitable aggregate was not always obtainable in actual practice, other means might be, therefore, at times necessary. The best method was doubtless to use a concrete which was waterproof in itself, and in which the reinforcement was protected by a sufficient thickness. He always aimed at a minimum covering of 1 in. for posts or poles. For wrought work, like signal posts, which usually were painted, concrete could hold its own as to cost.

Sleepers.

The chief difficulty to be overcome in a satisfactory concrete sleeper was the lack of elasticity, and there were many points of importance to be taken into consideration in designing sleepers, a few of which were:—

(1) The continuous repetition of impact to withstand which resilience was necessary, as well as first-class concrete, excellent reinforcement, and the best workmanship.

(2) Constant impact consolidated the sleeper bed, so that there was a tendency for the sleeper to become unevenly bedded, and it might even ride on its middle point. The top then got severe tension strains. If the track was trenched in the middle to avoid this the trench must not be made too wide, otherwise the effect would be reversed with equally unsatisfactory results, as experience had proved.

(3) The bearing area to ensure proper distribution of load required consideration.

(4) The weight of the sleeper required to be kept as low as possible, which, therefore, limited the design and the strength.

(5) Maintenance men were somewhat prejudiced, and required to be trained in the management of this new kind of sleeper.

(6) Concrete sleepers were expensive, and would be so until a satisfactory type was produced, when they would be manufactured in bulk and the cost consequently reduced.

(7) Many of the best known sleepers were too lightly reinforced; others, notably the Italian, were over-reinforced, consequently cutting the concrete up into too small sections.

They had to go some distance yet before concrete sleepers could be said to be entirely satisfactory, but there were many entirely satisfactory replacements of timber in signal fittings, compensator frames, and general work, etc., where the carpenter could be completely eliminated; also in window frames, which was certainly one of the most economical items, being much cheaper than wood and most efficient, and equally suitable for wood or iron casements. Another satisfactory product was name boards. The method of manufacture was somewhat novel, there being three colours of cement. The border was ordinary grey cement, the plate was of white cement, and the letters are black or red, or the colours of the board and lettering might be reversed. The letters were made separately, half the thickness being buried in the board and the other half standing out.

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DAMAGE BY VIBRATION FROM BUILDING OPERATIONS.

THE case of Hoare & Co., Ltd. *v.* Sir Robert McAlpine & Sons raises a point of considerable importance to owners of house property. The facts are given below, but a word may be said on the law. The defendants' operations included the driving of piles in considerable numbers and of large size into London clay, and the vibration caused such damage to the plaintiff's house that eventually it had to be pulled down to the ground floor level. Judgment was given for the plaintiffs, the amount of the damages to be assessed by the Official Referee. It appears that the Court, in giving judgment, relied upon the case Fletcher *v.* Rylands (1868 L.R. 3 H.L. 330), in which the principle laid down was that if a person brings material on his land or lets loose a force which is dangerous in its nature he must keep it under control, and if it escapes or causes damage to neighbouring property he is liable. That case was recently considered and applied by the House of Lords in Attorney-General *v.* Cory Brothers & Co., Ltd. (1921 1 A.C. 521; see *The Builder*, October 28, 1921.)

From the decision in the case we are now considering it would seem that the principle laid down in Fletcher *v.* Rylands has been applied to a person carrying on an operation which may cause damage to neighbouring property. According to the judgment the house was in a reasonably sound condition to withstand ordinary conditions; it was an old house, but in 1919 it had been repaired to the satisfaction of the City Surveyor, and been pronounced to be in a stable condition by the evidence given by the Surveyor. The defendants' operations appear to have been strenuous in character and continued over a long period.

The learned Judge, in giving judgment, is reported to have said that it was an alarming proposition that the Court should have to consider "when does an old building lose its right to protection?" This is, however, a proposition we ourselves drew attention to in an article in our issue of September 29 last, in connection with old buildings and the vibration caused by the modern extremely heavy mechanically propelled traffic. In the case we are considering the Court held that the house being in a reasonably sound condition there was no justification for its being shaken down in its declining years "by an adventurous and powerful neighbour," but the operations complained off were being carried out on private land, and the vibration was not, as is the case in the traffic we referred to, caused by use of the highway, whilst unlike that traffic it was longer continued and in one spot.

Modern conditions are very severe on house property, and the present case is instructive, but it remains to be seen whether owners of property have any remedy in damages from extraordinarily heavy traffic, and whether they can protect their property in any way by injunction or otherwise from that class of damage.

Adelaide House, London Bridge, now being built on the site of the old Pearl Assurance buildings, was the cause of an action which came before Mr. Justice Astbury, in the Chancery Division, on November 2 and following days. Sir Robert McAlpine & Sons, the building contractors, were sued by Hoare & Co., Ltd., brewers, and their tenant of the "Steam Packet" Hotel, Lower Thames-street, for damage for subsidence and vibration and loss of support to the hotel, which is situated on the north side of the street at the corner of Fish-street-hill. The defendants are constructing a very large building on the south side of Lower Thames-street. It is intended that the new building will attain a height of 120 ft. (and will thus be the highest building in the City, except St. Paul's), and a height of 100 ft. above the level of Adelaide-place. The site is on the London clay, over which there is a depth of about 16 ft. of made ground. In order that the building may be safe, it is necessary to drive a large number of piles through the made ground into the London clay, and the building will then be constructed on a raft of concrete on the top of the piles. The piles are more than 1 ft. square, and they are in length from 24 to 38 ft. Already 671 piles have been driven, and a large number have yet to be driven. They are driven either by a "monkey," which drops a weight of about 2¼ tons from a height of more than 5 ft. four times a minute, or by a hammer delivering 140 blows a minute. The plaintiffs' hotel is situated about 40 ft. from the nearest pile, and formerly consisted of four or five stories. The defendants began work about the middle of November, 1920, and the plaintiffs allege that the driving of the piles, by vibration or otherwise, produced such an effect on the building that on June 30, 1921, the City Corporation served on the owner or occupier of the building a notice that the building was in a dangerous state, and required to be made secure. The plaintiffs caused the building to be shored up, but on January 16, 1922, a notice was served that the house should be pulled down to the first floor, and on January 25 a summons was issued by the Corporation upon which an order was made on January 31. The house had since been pulled down except the ground floor, which the plaintiffs had been allowed to retain for the purpose of the sale of liquors. It was stated that the house was about 100 years old, and had recently been thoroughly repaired and was in a stable and good condition. The ground landlords of the plaintiffs' lease (which has about 10 years to run) are the Fishmongers Co., who require the plaintiffs to take all necessary action, relying upon the covenants of the lease.

Mr. Tomlin, K.C., and Mr. J. F. Carr appeared for the plaintiffs, and Mr. Upjohn, K.C., and Mr. Farwell for the defendants.

Evidence in support of the plaintiffs' case was given by Mr. J. E. Jefferson (their surveyor), Mr. T. D. Parkin (seismograph expert), Mr. E. Latham, Mr. John Todd (City Corporation Surveyor), Mr. M. L. Saunders (surveyor), and Mr. W. E. Riley, F.R.I.B.A.

The defendants' witnesses included Mr. C. W. Smithin (their surveyor), Mr. R. M. Gloyne (engineer, London County Council), Mr. R. J. Nesbitt and Mr. F. D. Martin (defendants' engineers), Mr. R. A. Jane (clerk of works), Mr. G. Freeman (of Sir Douglas Fox & Partners, consulting engineers for the building of Adelaide House), Mr. Basil Mott, and Mr. A. S. E. Ackerman.

The evidence was finished on Wednesday, November 15.

Mr. Upjohn, submitting the defendants' case, said the evidence showed that before they came on the scene the plaintiffs' building was in an unstable and dangerous condition. It had a horizontal thrust and insufficient means of resistance to that thrust; assuming there was any shaking which could affect this building, the evidence on both sides was that it was a building liable to be affected by a shaking which would not affect an ordinary building. The owner of such a building could not curtail the freedom of action of the defendants on the adjoining site. But the defendants did not by any operation on their land cause the damage complained of. The real damage in the case, namely, the pulling down, was the result of the weakness of the building brought about by the acts of the plaintiffs or their predecessors, and their omission for years—before the defendants went to the place at all and afterwards and particularly after the dangerous structure notice was given—to take any precautions or to execute any works which in the defendants' view were necessary to protect the building against the consequences of the plaintiffs' own acts.—Mr. Tomlin replied.

Judgment.

His lordship gave judgment on Tuesday, November 21. He said the defendants proposed to construct their building, which was to be ten or eleven stories in height, upon a raft of concrete resting on piles driven into the ground to a depth of 24 to 38 ft. This would necessitate piling to an extent of 800 or 900 super. ft. Two questions were raised by the action. The first, which was one of fact, was whether the vibration caused by the defendants' operations had any sensible effect on the plaintiffs' property, which was denied. The other was the question of law, and as put by the defendants' counsel it was whether, assuming that such effect was produced, the plaintiffs' building was so unstable and its power of resistance to external pressure was so low that the plaintiffs could not be prevented by law from doing that which in ordinary and normal circumstances they would be entitled to do. He accepted the plaintiffs' evidence, which showed that heavy vibration was caused by the defendants' operations to plaintiffs' building, which seven months after the piling began had become a wreck. Much of the defendants' expert evidence he could accept in principle, but it had no application to the present case. He held that the vibration produced by the defendants' operations caused serious structural damage and injury to the plaintiffs' building and resulted in the order to pull down. He did not believe the plaintiffs' building was in November, 1920, the delicate and fastidious invalid suggested by the defendants. It was true it was old, but he saw no justification for its being physically shaken in its declining years to a premature and untimely end by an adventurous and powerful neighbour. The plaintiffs were therefore entitled to succeed and were entitled to damages, and he declared accordingly. There would be an inquiry as to damages, and the defendants must pay the costs of the action.

ANSWERS TO CORRESPONDENTS.

We have received the following questions, to which answers are appended:—

Questions.

(1) What is a fair average cost of excavation only per cu. yd. for trenches up to, say, 6 ft. deep, and refilling and ramming; no carting or wheeling to be included?

(2) What percentage would you consider fair to add for this work in rock (not a hard rock, but stuff that can be shifted with pick and bar easily)?

(3) What percentage would you add over 6 ft. deep?

(4) How many cu. yds. of ground-up ordinary roads should an average man excavate in a day?

(5) How many cu. yds. of ground-up ordinary roads and fields should an average man refill per day?

Answers.

(1) The fair average cost of excavating and filling in ordinary ground per cu. yd. for trenches not exceeding 6 ft. deep is 3s. 6d.

(2) For rock similar to chalk requiring no blasting, 10s. 6d. per yd. cube.

(3) For each 6 ft. deep over first 6 ft., add 9d. in addition to cost of first 6 ft.

(4) An average man should excavate about three yds. cube of roadway and about eight yds. cube of common ground per day.

(5) An average man can return and fill in (not ramming) about 18 to 22 yds. cube of common ground per day. If ground is to be rammed, a rammer should attend on each filler.

NEW BUILDINGS IN LONDON.

FRITH-STREET, W. 1.—Messrs. Townsend & Pearson, Ltd., Dean-street, W. 1, have just completed the conversion of No. 64, Frith-street, an old private residence, into business premises, to be occupied by the British Wireless Supply Co., Ltd. The whole of the ground floor and basement has been gutted and reconstructed with new concrete fireproof floor, consisting of Hy-rib, concrete and steelwork. There is a new shop front and external iron staircase; also new sanitary accommodation. The whole of the external walls are treated in stucco-work. A new wing has been added to the upper part of the premises. The steelwork was supplied by the Aston Construction Co., Ltd., Eagle Wharf-road, N. 1, and the heating arrangements by Messrs. Henry White & Son, 55, Frith-street, W. 1. The architect is Mr. J. A. Emes, A.R.I.B.A., 21, Surrey-street, Strand, W.C. 2.

TUFTON-STREET, WESTMINSTER. — Messrs. Holliday & Greenwood, Ltd., Stewart's-road, Battersea, S.W.8, are building new offices for the Christian Soldiers' Association. The architects are Messrs. Trehearne & Norman. The steelwork is by Drew-Bear, Perks & Co., the steel sashes by R. E. Pearse & Co., and the asphalt by the London Asphalt Co.

CLAPHAM.—Messrs. W. Downs, Ltd., Hampton-street, Woolwich, S.E.17, are carrying out alterations to the South London Hospital for Women. Messrs. M. E. & O. H. Collins, 61, Old Broad-street, E.C.2, are the architects.

HIGH HOLBORN.—Mr. Henry J. Greenham, Rosebank Wharf, Fulham, S.W.6, is carrying out the demolition at Portella's, No. 122, High Holborn. The contractors are Messrs. W. F. Blay, Ltd., Railway House, Dowgate Hill. Messrs. Gilbert & Constanduros are the architects.

WEST HAM-LANE, STRATFORD.—Messrs. Holliday & Greenwood are building the first portion of a Nurses' Home for the Queen Mary Hospital for the East End. Messrs. Ashley & Newman are the architects. The building is of brick and artificial stone, with a slated roof. The steelwork is by Redpath, Brown & Co., and the artificial stone by A. C. W. Hobman & Co.

MILLBANK.—The conversion of premises into offices for the Crown Agents for the Colonies is being carried out by Messrs. Holliday & Greenwood. Messrs. Simpson & Ayrton are the architects.

BALHAM.—Messrs. James Potterton, Balham High-road, are making structural alterations to premises on Bedford Hill, Balham, for Mr. C. Kingston, who will open a butcher's shop.

REGENT-STREET.—Messrs. H. Sabey & Co., Paddington, W.2. are demolishing the premises of Messrs. Panhard & Levassor, Regent-street. The architects for the new building are Messrs. Belcher & Joass, 10, Old Burlington-street, W.1.

CLAPHAM.—The Royal Association in Aid of the Deaf and Dumb, 419, Oxford-street, London, W.1, have acquired a site at Clapham for a deaf and dumb institution. The architect is Mr. Edward Maufe, of 3, Raymond-buildings, W.C.1.

REGENT-STREET.—A new branch for the London County and Westminster Bank, in Regent-street, is being constructed by Messrs. Holliday & Greenwood. The architects are Messrs. Tanners. Messrs. Moreland Haynes & Co. are supplying the steelwork, Messrs. Diespeker & Co. the patent floors, Messrs. Haywards the steelwork sashes, and the asphalte by the Ragusa Asphalte Paving Co.

ALDERSGATE.—It may be recalled that the Ironmongers' Company were acquiring a site in Aldersgate for the erection of their new Hall. This, we now understand, is to be in Shaftesbury-place, the negotiations in respect of which have just been concluded. Messrs. H. E. Foster & Cranfield acted on behalf of the purchasers and Messrs. St. Quintin, Son & Stanley and Messrs. Hickson & Son represented the respective vendors. The architect appointed by the Company for the new Hall is Mr. Sydney Tatchell, F.R.I.B.A.

WAPPING.—Mr. Hy. J. Greenham, Rosebank Wharf, Fulham, S.W.6, has commenced the demolition of the old stables at Hermitage Wharf, Redmead-lane, Wapping. Messrs. Dove Bros., Ltd., Cloudesley-place, Islington, are to erect new stables to accommodate 49 horses The buildings will be of brickwork with concrete floors. The horses will be on the upper floor and there will be an open yard underneath.

HENRIETTA-STREET.—The demolition of premises on a large site in Henrietta-street is being undertaken by Mr. Hy. J. Greenham, of Fulham. We hope later to be in a position to give particulars of the proposed new building.

STRAND.—Messrs. Kirk & Kirk, Esher-street, Westminster, have been entrusted with the whole of the structural alterations to No. 73, Strand, for Messrs. Fairbrother, Ellis & Co. The extent of the alterations has not been definitely settled.

Messrs. T. H. Adamson & Sons, High-street, Putney, S.W., are carrying out work at Nos. 37-38, Strand. This consists of removing the defective portions of stonework to the two elevations in the Strand and Buckingham-street, and covering the weathering of cornices with lead. Messrs. Nicoll, Dawson & Humphries, Ltd., patent steel standard scaffold is being used.

HATTON GARDEN.—Messrs. Kirk & Kirk are carrying out the alterations for Messrs. Brandon Turner & Co., at No. 69, Hatton-garden. Mr. E. A. Stone, of Regent-street, W, is the architect.

FOUBERT-PLACE.—The construction of new premises for Messrs. Liberty & Co. is being undertaken by Messrs. Holliday & Greenwood. The building is of brick and stone, the architects being Messrs. E. T. & E. Stanley Hall. The steelwork is by Messrs. Edward Wood & Co., and the fire-resisting floors by the Kleine Fire-Resisting Flooring Syndicate, Ltd., London.

NEW BUILDINGS IN LIVERPOOL.

MR. J. E. ROWLANDS, architect, Lord-street, Liverpool, acting for the Committee of the Liverpool Hospital for Children, Leasowe, has prepared plans for an extension to the Hospital. Tenders have been sent in, and that of Messrs. J. A. Milestone & Son, Wallasey-road, Liscard, accepted.

Mr. Rowland Stubbs, of Messrs. G. Bradbury & Sons, has prepared plans for a new church, of St. Bead's, Hartington-road. The committee has accepted the tender of Messrs. Hough & Pilling, 9, Watmough-street, Liverpool.

The Liverpool Corporation Education Committee is inviting tenders for a new school to be built at Garston. The architects are Messrs. Smith & Sons, Fulwood, Sheffield.

COPPER-ALLOY PIPE FITTINGS.

Report No. 99-1922 on the subject of Copper-Alloy Pipe Fittings for pipe sizes from ⅛ in. to 4 in. has just been issued by the British Engineering Standards Association. The Report deals with the material to be employed, testing and dimensions for equal and reducing sockets, elbows, tees, plugs, crosses, return bends, &c., and both short turn and long sweep fittings are included. The Report contains numerous tables for equal fittings and the methods to be adopted for calculating the dimensions of reducing fittings, accompanied by explanatory figures in each case. Tables of centre to face dimensions for reducing fittings are given and also the standard sizes of these fittings in both short and long sweep varieties. Each type of fitting dealt with is illustrated by a figure. Some notes follow on the design of the fittings, accompanied by a diagram illustrating the method of setting out the curves. The Report concludes with appendices regarding screw threads and British Standard test pieces. Copies of this specification (price 1s. 2d., post free) are obtainable from the offices of the B.E.S.A., 28, Victoria-street, London, S.W.1.

NEW BUILDINGS IN SCOTLAND.

GREENOCK.—Plans have been passed by the Dean of Guild Court for 84 houses to be built by the Corporation at Upper Cornhaddock. The houses will be of the tenement type, and will consist of 10 single blocks of 6 houses each and 2 double blocks each containing 12 houses. Each house will be of three apartments. Plans were also passed for a new Mission Hall at East Hamilton-street, for the Garnart's Mission. The hall is to accommodate 320 people.

BUCKIE.—The Town Council has passed plans for a bungalow for Mr. James Cowie, 5, Hall-street, and for alterations to premises at 4, Cluny-terrace, for Mr. G. Cowie.

FORRES.—The Town Council has requested the Baths Committee to report as to the position of the funds bequeathed by the late Mr. J. Munro of Elgin, for the erection of public baths.

PAISLEY.—Messrs. R. & T. Russell have notified the Town Clerk that Miss Russell, Muirfield, Castlehead, Paisley, intends to erect a central medical clinic for the mothers and children of Paisley, and is at present negotiating for a suitable site. A villa in Mansionhouse-road is to be erected by Mr. Hamilton Neil, Architect, Gateside, Renfrew-road.

PAISLEY.—At a recent meeting of the Corporation Housing Committee it was resolved to make application to the Board of Health for permission to erect tenements.

PRESTWICK.—The Town Council are going to approach the Board of Health anent the erection of new houses.

DUNBAR.—The Dean of Guild Court passed plans for a number of bedrooms and a motor garage at Craigengelt Boarding House, and for the reconstruction of a house belonging to Mr. A. R. Robertson, in the Common Close.

DUNDEE.—The Licensing Appeal Court have approved of plans for the extension of the licensed business of Caws Rest, 21-25, Panmure-street, and also of the extension of the licensed premises at 55-57, Peddie-street, occupied by Mr. Francis Kiernan.

ST. ANDREWS.—The Managers of Martyrs U.F. Church have been considering the question of erecting a new church, and they intend to start building shortly. The architects for the job are Messrs. Gillespie & Scott.

TOBERMORY.—A representative from the Board of Health visited Tobermory for the purpose of examining the old sites in the Burgh, for the new housing scheme for the Town Council. He considers the sites are very suitable, and will give a favourable report to the Board.

FORRES.—Forres Dean of Guild Court has passed plans for a garage at Birdshaugh by Mr. Garrow, and alterations and extension to the garage at the Royal Station.

DUMFRIESSHIRE.—The County Council has approved of the scheme to erect a sanatorium at Lochmaben for the South Counties' Sanatorium Board, at a cost of £18,629.

WHITING BAY.—A site has been suggested and a committee chosen to further the project of erecting a hall, with recreation rooms and modern conveniences.

MILNGAVIE.—The Dean of Guild Court has passed plans for a house and offices in Heathfield Drive, for Mr. A. M. Burdon, Executive Officer of Dumbartonshire Education Authority.

ABERFELDY.—The works in connection with the preparation of Taymouth Castle as a Hydropathic, under the new company, are being pushed forward. New sanitary and heating systems are being introduced and the Castle is to be lit by electricity. The work in connection with the golf course has also been begun. The architect for the job is Mr. Andrew Balfour, of Glasgow, and the contractors, as far as arranged, are as follows:—Messrs. Elphinston & Forrest, Ltd., Glasgow, masons; Messrs. John Donald, Ltd., Glasgow, carpenters; Messrs. J. Reid & Sons, Catrine, Ayrshire, plastering; and Messrs. Brown & Co., Ltd., Paisley, tilework.

ABERDEEN.—The following new buildings and alterations were approved by the Town Council Plans Committee last week: Additions to 6,

Albury-road, for Messrs. P. Watson & Son; petrol depot at Bedford-road for The Anglo-American Oil Co.; garage at 43, Thomson-street, for Mr. J. H. Ewen; creosote oil tank, for Messrs. John Miller & Co., Sandilands; garage, 26, Canal street, Woodside, for Mr. G. Farquhar; two dwelling-houses, North Deeside-road, for Miss N. S. Hunter and Messrs. N. & S. Florence.

GLASGOW.—Plans have been passed for the erection of a factory at Pinkston for the Distillers' Co., and a garage and workshop at Port Dundas for the Anglo-American Oil Co.

PATENTS.

APPLICATIONS PUBLISHED.*

184,358.—C. Baghurst: Sliding door runners and sash holders.

184,361.—H. Abraham: Interlocking roofing shingles.

184,377.—J. Pitt and B. G. Archer: Casement and like hinges.

184,395.—F. W. McKerrow: Ventilators.

184,415.—W. Simons & Co., Ltd., and W. Brown: Hopper dredgers and hopper barges.

184,419.—E. W. Pritchard and B. P. Parry: Securing device for window catches.

184,497.—W. S. Robbins and J. Robbins: Construction of tubular, arched, and like structures.

184,513.—L. T. Godfrey-Evans: Submerged tunnels.

159,894.—D. Chioldi: Machines for moulding tiles and bricks.

184,522.—J. Jackson: Mortising machines.

LONDON MASTER BUILDERS' SPORTS ASSOCIATION.

Week ending November 25th, 1922.

	P.	W.	L.	D.	Goals. F.	A.	Pts.
Perrycobow ..	4	4	0	0	12	7	8
Trocoll ..	1	1	0	0	1	0	2
Minter	1	1	0	0	3	2	2
Holancube ..	1	0	1	0	2	3	0
Higadillo ..	2	0	2	0	4	6	0
Holloway ..	3	0	3	0	3	7	0

Last Saturday's match: Perrycobow, 2; Holloway, 0

L.C.C. School of Building, Brixton.

The following public lectures have been arranged by the London County Council at the School of Building, Ferndale-road, Brixton, S.W.4:—December 5, at 7.30 p.m., "Westminster Hall Roof: Its Decay and Restoration," by Sir Frank Baines, M.V.O., C.B.E.; December 14, at 7.30 p.m., "Old London," by Mr. H. A. Cox, F.C.A. Both lectures will be illustrated by models and lantern slides.

Incorporated Institute of British Decorators.

The Council of this Institute desire to call attention to the annual examinations for Associateship which are held in May of each year. Applications to take the examinations next year must be made on or before January 1, 1923. Syllabus of scope of examinations, forms of application, and copies of last year's examination papers may be had on application to the Secretary, Painters' Hall, Little Trinity-lane, London, E.C. 4.

Publicity Films.

Advertising by film in the public cinema is being increasingly adopted. The Cinema Publicity Service, Ltd., 42 & 43, Cranbourn-street, W.C. 2, gave a demonstration at the West End Cinema on Wednesday, last week. Films were screened on behalf of concerns ranging over many spheres of industry, which showed the possibilities of this new means of advertising, which is now widely recognised.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers	Slaters.	Plumbers	Painters.	Masons' Bricklayers' Labourers.	Plasterers
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Bath	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½	
Bedford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Birkenhead	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5½	
Birmingham	1/8	1/8	1/8	1/8	1/8	1/9	1/8	1/3	
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	0/11½	
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Cambridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0	
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Cheltenham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½	
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0	
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½	
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Grays	1/8	1/8	1/8	1/8	1/8	1/8½	1/7	1/3	
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Great Yarmouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0	
Guildford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0	
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½	
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Liverpool	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5½	
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
London	1/8	1/8	1/8	1/8	1/8	1/8½	1/7	1/3	
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Luton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0	
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Norwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½	
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½	
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0	
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
St. Albans	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
St. Helen's	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Scarborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Stoke-on Trent	1/8	1/8	1/8	1/8	1/8	1/9	1/0	1/3	
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4	1/0½	
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½	
aunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Torquay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Tunbridge Wells	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
York	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	

(For rates of wages in the Building Trade in Scotland, see page 851.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

DECEMBER 4.—**Burton-on-Trent.**—HOUSES.—Erection of 12 houses at Wellington-street, for the T.C. Mr. G. T. Lynam, Borough Engineer, Town Hall, Burton-on-Trent.

DECEMBER 4.—**Glenbrook.**—HOUSES.—Erection of eight houses at Glenbrook, for the Passage West U.D.C. Messrs. Chillingworth & Levie, architects, 11, South Mall, Cork.

DECEMBER 4.—**Milnsbridge.**—PAINTING.—For painting and decorating the Baptist Chapel. Mr. G. E. Beaumont, Kirkfield, Cowlersley.

DECEMBER 4.—**Ormskirk.**—REPAIRS.—For general repairs and minor alterations at the Industrial School, Ormskirk, for the Lancashire E.C. Mr. Henry Littler, County Architect, 16, Ribblesdale-place, Preston. Deposit £2.

DECEMBER 4.—**Rhondda.**—PAINTING.—For painting and colouring inside of Roman Catholic Schools, Tonypandy, for the Rhondda U.D.C. Mr. Jacob Rees, architect, Hillside Cottage, Pentre.

DECEMBER 4.—**Otley.**—SCHOOL.—Erection of new secondary school, for the West Riding E.C. Education Department, County Hall, Wakefield.

DECEMBER 4.—**Sheffield.**—SUB-STATION.—Erection of transformer sub-station in Sterndale-road, Millhouses, for the T.C. Mr. S. Fedden, General Manager, Electricity Department, Commercial-street, Sheffield. Deposit £1 1s.

DECEMBER 5.—**Cardiff.**—PAVILION, &C.—New hospital pavilion and X-ray room at City Lodge, for the B.G. Messrs. Willmott & Smith, architects, 4, Park-place, Cardiff. Deposit £3 3s.

DECEMBER 5.—**Douglas.**—BRIDGE.—Taking down of the present stone arch bridge, and construction of necessary masonry and concrete work for new bridge, which is to be erected in steelwork, for the Highway Board. Mr. Jos. E. Teare, surveyor, 46, Athol-street, Douglas.

DECEMBER 5.—**Edinburgh.**—WALLS.—Erection of retaining and other walls, &c., in connection with Glasgow-road widening, for the T.C. City Road Surveyor, City Chambers, Edinburgh.

✱ DECEMBER 5.—**Fleetwood.**—HOUSES.—Erection of 34 houses on the Warren Farm Estate, Fleetwood, for the U.D.C. Mr. Bertram Drummond, F.S.I., A.R.I.B.A., 54, Adelaide-street, Fleetwood. Deposit £2 2s.

DECEMBER 5.—**Mountain Ash.**—VARIOUS WORKS.—For the following works: (*a*) Ynysboeth Mixed School, erection of two classrooms, corridor (semi-permanent type), &c.; (*b*) Carnetown Mixed Schools playground, re-forming, building retaining walls, asphalting, &c., for Mountain Ash Education Committee. Mr. W. H. Williams, M.S.A., Town Hall, Mountain Ash.

DECEMBER 5.—**Salisbury.**—WALL.—Rebuilding boundary wall at Fisherton-street, for the T.C. City Engineer, Municipal Offices, Salisbury.

DECEMBER 6.—**Aberayron.**—RENOVATIONS AND PAINTING.—For painting, inside and out, decorating and repairing the Town Hall. Mr. John Davies, County Surveyor, Llywnteg, Henllan, Card.

DECEMBER 6.—**Bathgate.**—FENCING.—For the erection of timber and iron fencing, for the T.C. housing scheme at Kirkroads. Mr. Fred Smith, F.F.S., 30, Brandon-street, Motherwell.

DECEMBER 6.—**Manchester.**—PAINTING.—For painting work at the Reference Library and extension buildings, Piccadilly, and Blackley Library, for the T.C. City Architect, Town Hall, Manchester. Deposit 10s. 6d. each.

DECEMBER 6.—**Nottingham.**—PAINTING.—Internal cleaning and painting at the following schools: All Saints' Council School, Forest-road, Lenton Council School, New Basford Council School, Sneinton-boulevard Council School, St. Mary's Trust School, Barker-gate. Mr. A. Dale, City Architect, Guildhall, Nottingham. Deposit £1 1s. each contract.

DECEMBER 6.—**Redcar.**—EXTENSIONS.—For extensions at 134, High-street, Redcar. Mr. J. Jackson, architect, Marske-by-the-Sea.

DECEMBER 7.—**Stourbridge.**—HOUSES.—Erection of 24 "B" type houses on the George Estate, for the T.C. Mr. F. Woodward, Borough Surveyor, Market-street, Stourbridge.

DECEMBER 8.—**Darfield.**—BUNGALOW.—For all the trades in the erection of a bungalow at Monk Bretton. Mr. E. Hammerton, 1, Garden-street, Darfield.

DECEMBER 8.—**Liverpool.**—ALTERATIONS.—Alterations at the Custom House, Liverpool, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s.

DECEMBER 8.—**Middlesex.**—TEMPORARY TELEPHONE EXCHANGE.—Erection of a temporary telephone exchange at Southall (Middlesex), for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s.

DECEMBER 8.—**Monk Bretton.**—BUNGALOW.—Erection of a bungalow at Monk Bretton. Mr. E. Hammerton, architect, Darfield.

DECEMBER 8.—**Norfolk.**—ALTERATIONS.—Additions and repairs to farm buildings at Glebe Farm, Burlingham, St. Peter, and Willow Farm (late Red Farm), Burlingham St. Edmund, Norfolk, for the Small Holdings Committee of the Norfolk C.C. Mr. Victor Playle, County Land Agent, The Shirehouse, Norwich. Deposit £1 1s.

DECEMBER 8.—**Shirley.**—PAINTING.—Internal redecoration of six of the cottages, Shirley Schools, Wickham-road, Shirley, near Croydon, for the Bermondsey B.C. Mr. Henry H. Reeve, Clerk, 283, Tooley-street, S.E.1. Deposit £5.

DECEMBER 9.—**Aberystwyth.**—PREMISES.—For erection of premises in the Terrace-road on sites of Nos. 43 and 45, now in occupation of Mr. J. O. Williams. Mr. H. M. James, architect and surveyor, Santa Fe, Powell-street, Aberystwyth.

DECEMBER 9.—**New Swannington.**—SCHOOL.—Erection of New Swannington Council School, for the Leicester C.C. Architect, County Education Office, Grey Friars, Leicester. Deposit £2 2s.

DECEMBER 9.—**Tadcaster.**—GATES, &C.—Providing and fixing gates and fencing on the following building sites: Allerton Bywater, Kippax, Micklefield, and Swillington, for the R.D.C. Messrs. Jones & Stocks, architects, Prudential Buildings, Leeds.

✱ DECEMBER 9.—**Tilbury.**—HOUSES.—Erection of 42 houses in the South Ward, for the U.D.C. Mr. A. W. Buckner, Clerk, Council Offices, Tilbury.

DECEMBER 11.—**Glasgow.**—HOUSE.—Erection of a doctor's house, at Robroyston Hospital, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

DECEMBER 11.—**Gleneagles.**—PLUMBER AND PLASTER WORK.—For (*a*) Plumber work, (*b*) plaster work, at Gleneagles Hotel, for the Caledonian Railway Co. Mr. Matthew Adam, architect, 160, Hope-street, Glasgow. Deposit £2 2s.

DECEMBER 11.—**Royston.**—HOUSES.—Erection of 12 houses off Station-road, Royston, for the U.D.C., and for road making and the laying of 9 in. pipe sewer. Messrs. Dyson, Cawthorne & Coles, architects, 10, Regent-street, Barnsley. Deposit £1 1s.

DECEMBER 11.—**Saltash.**—ALTERATIONS.—For structural alterations, new north wall and new roof, at the Guildhall. Borough Surveyor, Saltash.

DECEMBER 11.—**Wigan.**—HOUSES.—Erection of fifty houses on the Ridyard site, in lots of eight, eight, eight, twelve and fourteen, in accordance with specification and ⅛-in. scale plans. Mr. R. B. Donald, M.Inst.C.E. Borough Engineer, Municipal Buildings, Library-street, Wigan. Deposit £2 2s.

DECEMBER 12.—**Farnham.**—HOUSES.—Erection of 10 houses at Weybourne, for the U.D.C. Mr. J. W. Wright, Clerk, Council Offices, Farnham. Deposit £2 2s.

DECEMBER 12.—**Mullingar.**—HOUSES.—Erection of 12 workmen's houses, for the Town Commissioners. Mr. P. J. O'Loughlin, architect, The Courthouse, Athlone.

✱ DECEMBER 14.—**London, S.E.**—CLEANING AND PAINTING.—Internal cleaning and painting works, &c., at the Hospital, East Dulwich-grove, S.E., for the Guardians of the Southwark Union. Guardians' Architects, Messrs. A. Saxon, Snell & Phillips, 9, Bentinck-street, Manchester-square, W.1, from December 1 to 6. Deposit £2.

✱ DECEMBER 15.—**Birkenhead.**—TELEPHONE EXCHANGE.—Erection of a telephone exchange at Birkenhead, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s.

DECEMBER 15.—**Brighton.**—SCHOOL.—Erection of a school of two departments on a site adjoining the northern boundary of the Borough in Loder-road, Brighton, for the Education Committee of the County Borough of Brighton. Messrs. T. Simpson & Son, 16, Ship-street, Brighton. Deposit

DECEMBER [illegible].—**Hertford.**—STAND.—Provision and erection of a sectional stand and other accommodation to seat 400 people. Mr. H. J. Gray, "Salisbury Arms" Hotel, Hertford.

DECEMBER 16.—**Harrow-on-the-Hill.**—SWIMMING BATH, &C.—Construction of open-air swimming bath, conveniences, dressing sheds, &c., for the U.D.C. Mr. Percy Bennetts, Surveyor, Council Offices, Harrow. Deposit £[illegible].

DECEMBER 16.—**Methley.**—HOUSES.—Erection of 12 Class "A" State-aided houses in blocks of four, for the U.D.C. Mr. Thomas Thompson, surveyor, Red House, Methley.

✱ DECEMBER 18.—**London.**—SWIMMING BATHS.—Construction (in reinforced concrete) of open-air swimming baths at Highbury Fields and Southwark Park, and a swimming pool at Peckham Rye, for the L.C.C. Chief Officer, Parks Department, County Hall, Westminster Bridge, S.E.1.

✱ DECEMBER 19.—**Conisborough.**—HOUSES.—(*a*) The erection of 22 non-parlour type houses, semi-detached, Type 8 A, in 1 to 11 blocks; (*b*) the erection of eight parlour type houses, in blocks of four, Type 9 A. Contractors may tender for one or more blocks or the whole of the 30 houses, for the U.D.C. Mr. H. Thirlwall, Surveyor, Council Offices, Conisborough, via Rotherham.

✱ DECEMBER 19.—**Kent.**—TEMPORARY TELEPHONE EXCHANGE.—Erection of a temporary telephone exchange at Altham, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s.

DECEMBER 31.—**Cape Town.**—UNIVERSITY.—University of Cape Town; New University Buildings. Preliminary notice. First portion of the works to be contracted for will comprise residences for 200 men and 200 women, with retaining walls, &c. Particulars: High Commissioner for the Union of South Africa, Trafalgar-square, London, W.C. Deposit £15, must be made with the application.

NO DATE.—**Armadale.**—FENCING.—Erection of iron and wood fencing, at Russell-row housing site, for the T.C. Mr. Fred Smith, measurer, 30, Brandon-street, Motherwell.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Bricklayers' Labourers.	Plasterers'
Aberdeen	1/7	1/10½	1/7	1/7½	1/8	1/9	1/7	1/2 to 1/4	
Airdrie	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3	
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2	
Arbroath	1/7	1/7	1/7	1/7	1/7	1/7	1/8	1/1	
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Bathgate	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/7	—	
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Coatbridge	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Dumfries	1/6	1/6	1/6	1/6	1/6	1/8	1/8	1/2	1/2½ 1/3½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Falkirk	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	—	1/1½	
Galashiels	1/6	1/6	1/6	1/6	1/6	1/6	1/8	1/1½	
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Greenock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/1 to 1/3	
Hamilton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Hawick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Helensburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Inverness	1/6½	—	1/6	1/7	1/6½	1/7	1/8	10d. to 1/2	
Kilmarnock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Kirkcaldy	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Kirkwall	1/5	1/5	1/4	1/7	1/5	1/5	1/4	1/2	
Lanark	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/2	
Motherwell	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3	
Perth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/2	
Stirling	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Stirlingshire (Eastern District)	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Wishaw	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 850.

NO DATE.—**Belgium.**—FLATS.—The Commercial Secretary at Brussels (Mr. J. Picton Bagge) has informed the Department of Overseas Trade that the Brussels Municipal Authorities have authorised the construction of a large block of flats in one of the principal streets of the city. The building, which is to consist of 120 flats, and to provide garage accommodation for 100 motor cars, is to be erected by the Crédit Général Hypothécaire, 38, Boulevard Bischoffsheim, Brussels, to whom interested British firms may care to communicate offers of fittings, furnishings, &c.

NO DATE.—**Bo'ness.**—INSTITUTE.—For construction, consisting of suitable institute and caretaker's house, suitable for mining district. Mr. James Holmes, Jr., Kinneil Colliery Office, Bo'ness.

NO DATE.—**Dovercourt.**—HOUSE.—Erection of garage and dwelling-house in Dovercourt. Mr. F. G. Vincent-Brown, architect, Dovercourt Bay.

NO DATE.—**Tillicoultry.**—EXTENSIONS.—Raising the spinning mill at Devonpark, Tillicoultry, an additional story. Mr. A. Bracewell, A.R.I.B.A., for Robert Archibald & Sons, Tillicoultry.

NO DATE.—**Ystrad Mynach.**—LIBRARY.—Erection of Penallta Workmen's Library and Institute, Ystrad Mynach. Mr. H. Gabe Jones, architect, Bank Chambers, Hengoed.

FURNITURE, MATERIALS, etc.

DECEMBER 4.—**Trowbridge.**—MATERIALS.—Road Materials, for the Wilts C. C. Mr. J. George Powell, County Surveyor, Trowbridge.

DECEMBER 5.—**Dover.**—MATERIALS.—Supply of materials for bricklaying, carpenter and ironmonger's work, for the T.C. Town Clerk, Dover.

DECEMBER 7.—**Aberdeen.**—STORES.—Supply to the Great North of Scotland Railway Co. of stores. Stores Superintendent, 80, Guild-street, Aberdeen.

DECEMBER 7.—**Ashford.**—MATERIALS.—Supply of builders' materials, &c., to the Managers of the West London School District. Mr. F. G. Beeching, Clerk, Schools, Ashford, Middlesex.

DECEMBER 7.—**Bridgend.**—FURNISHING MATERIALS, &c.—For supply of woodwork, furnishing materials, &c., for the Bridgend and Cowbridge Union. Mr. R. Harner Cox, Clerk to the Guardians, Union Offices, Bridgend.

DECEMBER 7.—**Nottingham.**—MATERIALS.—Supply of materials to the Works and Ways Committee of the T.C. Mr. T. Wallis Gordon, City Engineer, Guildhall, Nottingham. Deposit 5s.

DECEMBER 9.—**Maidstone.**—MATERIALS.—Supply of road materials to the Kent C.C. Mr. H. T. Chapman, County Surveyor, Maidstone.

DECEMBER 9.—**Roumania.**—TOOLS.—Supply to the Roumanian Railroad Administration of 1,442 bits (assorted centre and gimlet) and 23 screw augers. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 11.—**Margate.**—ROAD MATERIALS.—Supply of road materials to the T.C. Mr. Ernest A. Borg, Borough Surveyor, 13, Grosvenor-place, Margate.

DECEMBER 11.—**Middleton.**—Supply of road materials, &c., to the T.C. Borough Engineer, Town Hall, Middleton.

DECEMBER 11.—**Warrington.**—KERBING.—Supply of 2,000 lin. yards of 6 in. by 12 in. dressed and jointed kerbs, and 600 lin. yards of 4 in. by 12 in. dressed and jointed kerbs, for the T.C. Mr. Andrew M. Ker, Borough Engineer, Warrington.

DECEMBER 12.—**Roumania.**—SHOVELS.—Supply to the Roumanian Railroad Administration of 22,500 steel-pointed mouth shovels and 1,500 steel coal shovels. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

JANUARY 3.—**Peterborough.**—MATERIALS.—Supply of road materials to the C.C. Mr. H. Russell, County Surveyor, 45, Priestgate, Peterborough.

JANUARY 31.—**Siam.**—RAILWAY STORES.—Supply to the Department of State Railways, Siam, of railway store materials. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W.1. Charge £2 12s.

ENGINEERING, IRON AND STEEL.

DECEMBER 4.—**Edinburgh.**—FENCING.—For new wrought-iron fencing at widened frontages in Glasgow-road, for the T.C. City Road Surveyor, City Chambers, Edinburgh.

DECEMBER 4.—**Kettering.**—PIPES.—Supply to the U.D.C. of cast-iron water mains. Mr. T. Reader Smith, Water Engineer, Market-place, Kettering.

DECEMBER 4.—**Stanford-le-Hope.**—BRIDGE.—Reconstruction of Stanford-le-Hope Bridge and other works, for the Essex C.C. Mr. William H. Morgan, County Surveyor, Chelmsford.

DECEMBER 4.—**Swansea.**—FENCING.—Supply of wrought-iron fencing and gates to the T.C. Parks' Superintendent, 4, Prospect-place, Swansea.

DECEMBER 4.—**Swansea.**—RAILS, &c.—Supply to the Swansea Harbour Trust of rails and fish-plates, 4,630 new creosoted sleepers, &c. Mr. A. O. Schenk, Harbour Offices, Swansea.

DECEMBER 5.—**Edinburgh.**—TRAMWAY MATERIALS.—Supply of car top covers and steel tramway rails, to the Tramways Department. Tramways Manager, 2, St. James'-square, Edinburgh.

DECEMBER 5.—**Glasgow.**—ELECTRIC LIGHT INSTALLATION.—Electric lighting installation of the Mosspark housing scheme, for the T.C. Electrical Engineer, 75, Waterloo-street, Glasgow.

DECEMBER 5.—**London.**—BRIDGES.—Supply of girder bridges (25 spans, 60 ft. clear deck), to H.E.H. the Nizam's Guaranteed State Railways Co., Ltd. Mr. F. Adams, Secretary, Winchester House, 50, Old Broad-street, E.C.2. Charge 10s.

DECEMBER 5.—**London.**—WHEELS, &C.—Wheels and axles, for the High Commissioner of India. Director-General, India Store Department, 12, Belvedere-road S.E.

DECEMBER 5.—**New Zealand.**—TELEPHONES.—For telephone system for the Mangahoo Power House. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 6.—**Berks.**—IRON STAIRCASE.—Iron fire-escape staircase, &c., to staff quarters at Pinewood, near Wokingham, Berks, for the Metropolitan Asylums Board. Engineer-in-Chief, Office of the Board, Embankment, E.C.4. Deposit £1.

DECEMBER 6.—**Cardiff.**—BRIDGE.—Widening and reconstruction of Mill Bridge, Dinas Powis, for the R.D.C. Mr. W. Farrow, surveyor, Park House, 20, Park-place, Cardiff. Deposit £2 2s.

DECEMBER 6.—**London.**—BRIDGES.—Supply to the Burma Railways Co., of girder bridges, of 10, 20, 40, 60 and 100 ft. span. Secretary, 199, Gresham House, E.C. Charge £1.

DECEMBER 6.—**London.**—LATHES.—Supply to the East Indian Railway Co. of lathes. Mr. G. E. Lillie, 73-76, King William-street, E.C.4. Charge £1 1s.

DECEMBER 7.—**Leicester.**—RESERVOIR.—Designs and tenders for the construction of a covered service reservoir of 5,000,000 gallons capacity at Evington, for the T.C. Mr. G. T. Edwards, Water Engineer, Bowling Green-street, Leicester

DECEMBER 7.—**London.**—STEEL BARS.—Supply of mild steel bars for reinforced concrete, for the High Commissioner for India. Director-General, India Store Department, Belvedere-road, S.E.

DECEMBER 8.—**London.**—RAILWAY MATERIAL.—Supply to the Assam-Bengal Railway Co. of (1) three first and second composite and 25 third class bogie carriages; (2) 132 prs. wheels and axles. Offices of the Company, Bishopsgate House, 80, Bishopsgate, E.C.2. Charge, £1 1s. each.

DECEMBER 9.—**Southgate.**—REFUSE DESTRUCTOR.—Extension of the refuse destructor, Barrowell-green, Winchmore-hill, for the U.D.C. Mr. R. Phillips, Surveyor, Southgate Town Hall, Palmers Green, N. 13.

DECEMBER 12.—**London.**—STEEL.—Supply to the Madras & Southern Mahratta Railway Co., of (1) 800¼ tons steel material (sections and plates); (2) 238 tons spring steel (flat and round); (3) 84 tons metals (aluminium, antimony, brass, copper, lead, zinc). Secretary, 25, Buckingham Palace-road, Westminster, S.W.1. Charge £1 1s. each.

DECEMBER 12.—**New Zealand.**—PLATE GIRDERS.—Supply to the Public Works Department of plate girders, for the Lawrence-Roxburgh and the Taneatue Railways. Department of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 14.—**Aberdeen.**—PIPES, &C.—Supply of 1½ miles of 4 ft. diameter pipes and specials of the following alternative types, viz., (*a*) cast-iron; (*b*) mild steel (lapwelded). Mr. George Mitchell, Water Engineer, 41½, Union-street, Aberdeen. Deposit £5.

DECEMBER 14.—**London.**—GIRDER BRIDGES.—Supply to the High Commissioner for India of girder bridges, 100 ft. spans. Director-General, India Store Department, Branch No. 12, Belvedere-road, Lambeth, S.E.1.

DECEMBER 15.—**London.**—STEELWORK.—Supply of steelwork for paint and electrical shop (Trichinopoly Workshops Scheme), for the South Indian Railway Co. Mr. A. Muirhead, Managing Director, 91, Petty France, S.W.1. Charge £1.

DECEMBER 16.—**Guernsey.**—CONCRETE DECK.—Removal of the timber deck at the North (White Rock) Pier Head, and the construction of a new deck in reinforced concrete on the Considere System, at St. Peter Port. Mr. J. H. Duquemin, States Engineer, States Office, Guernsey.

DECEMBER 18.—**Hitchin.**—TANK.—For a reinforced concrete water tank of 390,000 gallons capacity, with 12 in. cast-iron connections, for the U.D.C. Mr. W. Onslow Times, Clerk, Town Hall, Hitchin. Deposit £2 2s.

DECEMBER 18.—**Victoria.**—COAL HANDLING PLANT.—For coal handling plant for the Morwell Power scheme, for the Victorian State Electricity Commission. Agent-General for Victoria, Melbourne-place, Strand, W.C.2. Deposit £2 2s.

DECEMBER 20.—**Australia.**—BORING MACHINE.—Supply to the Victorian Government Railways Commissioners of horizontal boring machine. Department of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 21.—**Bolton-upon-Dearne.**—LIGHT RAILWAYS.—Construction and equipment of light railways, for the Dearne District Light Railways Joint Committee. Mr. J. Ledger Hawksworth, Clerk, Council Offices, Bolton-upon-Dearne. Deposit £5.

DECEMBER 22.—**London.**—MATERIALS.—Supply of (a) steam piping, &c., (b) plate and sheet glass, &c., to the Bombay, Baroda & Central India Railway Co. Mr. S. G. S. Young, Secretary, 91, Petty France, S.W. Charge £1 for (a), and 10s. for (b).

DECEMBER 31.—**Argentine.**—RAILWAY.—Construction and equipment of 650 and 185 kilometres of one metre gauge railway as well as for the financing of the same, for the State Railways of the Province of Buenos Aires (Argentine Republic). Argentine Legation, Aldford House, 26, Park-lane, W.1.

JANUARY 6.—**Glasgow.**—BRIDGE.—Construction of ferro-concrete bridge over the Clyde at Oswald-street. Office of Public Works, 64, Cochrane-street, Glasgow.

JANUARY 31.—**Australia.**—ELECTRICAL PLANT.—Supply of steam turbine and other plant to the Morwell Power Station, for the State Electricity Commission. Agent-General for Victoria, Melbourne-place, Strand, W.C. Deposit £2 2s.

FEBRUARY 1.—**Auckland.**—ELECTRIC CRANES.—For the supply of twelve five-ton (alternatively three-ton) semi-portal balanced jib electric quay cranes, four five-ton (alternatively three-ton) balanced jib electric roof cranes, and six one-ton electric monorail cranes, for Auckland Harbour Board. Messrs. W. & A. McArthur, Ltd., 18-19, Silk-street, Cripplegate, London, E.C.2. Deposit £2 2s.

NO DATE.—**Forfarshire.**—PUMPING PLANT.—(*a*) Supply and erection of a windmill pumping plant, complete, capable of raising 12,000 gallons per day; (*b*) windmill pumping plant, complete, to raise 10,000 gallons per day; (*c*) oil or petrol engine pumping plant, complete, to raise 12,000 gallons in a period of from four to five hours; (*d*) oil or petrol engine pumping plant, complete, to raise 10,000 gallons in a period of from four to five hours, for the Board of Agriculture, Board's Chief Surveyor, Board of Agriculture for Scotland, York Buildings, Edinburgh.

NO DATE.—**Lichfield.**—FILTERS.—Rapid gravity or pressure filters for the purpose of treating and filtering water at the Sandfields pumping station of the South Staffordshire Waterworks Co. Mr. Fred. J. Dixon, Engineer, 26A, Paradise-street, Birmingham.

NO DATE.—**Lichfield.**—WATER PLANT.—Supplying and erecting Diesel or steam engines with electric generators, force pumps, and well pumps, at Sandfields Pumping Station, Lichfield, for the South Staffordshire Waterworks Co. Mr. Fred. J. Dixon, Engineer, 26A, Paradise-street, Birmingham.

NO DATE.—**Rhondda.**—STEAM ROLLER.—For supply of second-hand 8-ton steam roller for tar macadam work and asphalte surfacing work, for Rhondda U.D.C. Mr. E. Taylor, Engineer and Surveyor, U.D.C. Offices, Pentre, Rhondda.

ROAD, SANITARY, AND WATER WORKS.

DECEMBER 2.—**Chapel-en-le-Frith.**—WATERWORKS.—Construction of a concrete service reservoir and the providing and laying of about 5,200 lineal yards of 5 in. cast-iron spigot and socket pipes, &c., for the R.D.C. Messrs. Brady & Partington, Town Hall, Chapel-en-le-Frith. Deposit £5.

DECEMBER 2.—**Sevenoaks.**—WATER SUPPLY.—Supplying and laying 1,100 yds. of 2-in. and 3-in. cast-iron pipes for water supply to Charcott, for the R.D.C. Messrs. Easton, Courtney & Darbishire, 25, Victoria-street, Westminster, S.W. 1. Deposit £1 1s.

DECEMBER 4.—**Altrincham.**—ROADS, &C.—Sewering, draining and formation of new road, for the U.D.C. Surveyor, Town Hall, Altrincham.

DECEMBER 4.—**Atherstone.**—SEWER.—Laying only of about 500 lin. yards of 27 in. diameter pipe sewer, at Ratcliffe-road, for the R.D.C. Mr. H. J. Coleby, Surveyor, 102, Long-street, Atherstone.

DECEMBER 4.—**Barnsley.**—ROADS.—Making up Belgrave-road, Meadow-street, Denton-street, Coniston-road, Back-road from Day-street to Pond-street, for the T.C. Borough Engineer, Fairfield House, Barnsley.

DECEMBER 4.—**Birmingham.**—SEWERS.—For carrying out sewerage works in Percy-road, Sparkhill, Lordswood-road, Harborne, and Stuarts-road, Stechford, for the T.C. Mr. Herbert H. Humphries, City Engineer, The Council House, Birmingham. Deposit £3.

DECEMBER 4.—**Enfield.**—SEWERS.—Construction of 24 in. and 30 in. concrete pipe sewers, &c., at Ponders End, for the U.D.C. Mr. H. R. Crabb, Surveyor, Public Offices, Enfield. Deposit £2 2s.

DECEMBER 4.—**Kenfig Hill (Glam.).**—LAYING OF MAINS.—For supply and laying of about 1,800 lin. yds. of eight-inch diameter cast-iron mains with all necessary sluice valves, hydrants, &c., for the Mid-Glamorgan Water Board. Mr. Elryn W. Davies, Superintendent and Manager, Water Board Offices, Bridgend. Deposit £1 1s.

DECEMBER 4.—**Laurieston.**—SEWERS.—Construction of sewers, &c., at Laurieston, for the Stirling C.C. Messrs. Wilson & Tait, C.E., Grangemouth.

DECEMBER 4.—**Nottingham.**—LEVELLING, &C.—Excavating, levelling and tar paving of the Old Burial Ground, Barker-gate, for the T.C. Mr. T. Wallis Gordon, City Engineer, Guildhall, Nottingham. Deposit £2.

DECEMBER 4.—**Redding.**—DRAINAGE.—Construction of sewers, sewage tanks, filters, &c., at Redding, for the Stirling C.C. Mr. Gilbert Thomson, M.Inst.C.E., 164, Bath-street, Glasgow. Deposit £2 2s.

DECEMBER 4.—**Stafford.**—ROADS.—Making up Beacon-street and Back Providence-place, for the T.C. Mr. W. Plant, Borough Engineer, Borough Hall, Stafford. Deposit £1 1s.

DECEMBER 4.—**Stafford.**—SEWERS.—Construction of about 310 yards of 15 in. diameter, 1,570 yards of 12 in. diameter, and 785 yards of 9 in. diameter pipe sewers, for the T.C. Mr. W. Plant, Borough Engineer, Borough Hall, Stafford. Deposit £3 3s.

DECEMBER 5.—**Hemsworth.**—ROADS.—Making-up streets in Elmsall, South Elmsall, and Grimethorpe, for the R.D.C. Mr. W. T. Lynam, surveyor, Hemsworth. Deposit £1 1s.

DECEMBER 5.—**Newcastle-on-Tyne.**—PLUMBERS' WORK.—Execution of plumbers', gasfitters', and smiths' work in the Newcastle-on-Tyne district during one or three years, for H.M. Office of Works, Contracts' Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit 10s. 6d.

DECEMBER 5.—**Whickham.**—ROADS.—Extension of Wellington-road, Dunston, for the U.D.C. Mr. Thos. Fenbow, Surveyor, Council Offices, Whickham. Deposit £2 2s.

DECEMBER 6.—**Cardiff.**—SEWER.—Construction of about 500 lineal yards of 9-in. earthenware pipe sewer, with manholes, &c., at Whitchurch, for the R.D.C. Mr. William Farrow, surveyor, Park House, 20, Park-place, Cardiff.

DECEMBER 6.—**Crigglestone Newmillerdam.**—SANITARY.—Conversion of the conveniences into W.C.'s at Council School, for the West Riding C.C. Education Department, County Hall, Wakefield.

DECEMBER 6.—**Glamorganshire.**—VARIOUS WORKS.—For (*a*) widening and improving Neath and Glyn Neath main road between Aberdulais and Resolven; (*b*) widening and improving the Swansea, Killay and Port Eynon main road between Killay and Fairwood Common; (*c*) Bridgend and Llantrisant main road improvement and widening between Lanelay and Talbot Inn; and (*d*) kerbing of footways at Caerphilly and Bedwas, Caerphilly and Llanbradoch, and Neath and Port Talbot, for the Glamorgan C.C. Details of contract (*a*) from County Police Station, Neath; of (*b*) Police Station, Gowerton; (*c*) Police Station, Llantrisant; and (*d*) Police Station, Neath. Sir T. Mansel Franklyn, Clerk to the C.C., Cardiff.

DECEMBER 6.—**Hove.**—SEWER.—Laying new sewer, new footway and other works in Westbourne-place, for the T.C. Borough Surveyor, Town Hall, Hove.

DECEMBER 6.—**Middlewich.**—ROADS.—Surface drainage and road work, for the U.D.C. Mr. F. W. Stocks, Surveyor, Town Hall, Middlewich.

DECEMBER 6.—**Whitchurch (Glam).**—SEWERS.—For construction of 500 lin. yds. of 9 in. earthenware pipe sewer with manholes, &c., at Heol-y-deri and Butchers' Arms-road, Whitchurch, for Cardiff R.D.C. Mr. William Farrow, Park House, 20, Park-place, Cardiff.

DECEMBER 6.—**Wood Green.**—CULVERT.—For diverting and culverting Mus Well stream, for the U.D.C. Mr. C. H. Croxford, Surveyor, Town Hall, Wood Green. Deposit £1 1s.

DECEMBER 7.—**Salford.**—ROADS.—For asphalting footpaths and tar-macadamising carriageway of one street on the Weaste housing scheme, for the T.C. Borough Engineer, Town Hall, Salford.

DECEMBER 7.—**Southend - on - Sea.**—ROADS.—For making up back passage at Queen's-road, section 3 of Electric-avenue, and section 3 of Oakleigh Park-drive, for the T.C. Mr. R. H. Dyer, Borough Engineer, outhend-on-Sea. Deposit £2.

DECEMBER 9.—**Basford.**—SEWERS.—For laying about 800 yards of 9 in. stoneware sewers, &c. Mr. S. Maylan, Surveyor, Public Offices, Basford. Deposit £2 2s.

DECEMBER 9.—**Bexley.**—ROADS.—Widening and improvement of Vicarage-road, for the U.D.C. Mr. W. T. Howse, Surveyor, Council Offices, Bexley Heath, Kent. Deposit £3 3s.

DECEMBER 9.—**Tadcaster.**—DRAINS.—Construction of land tile and rubble drains at Swillington housing site, for the R.D.C. Messrs. Jones & Stocks, Prudential Buildings, Leeds.

DECEMBER 9.—**York.**—ROADS.—Making up Hawthorn-street (part), for the T.C. Mr. F. W. Spurr, City Engineer, Guildhall, York. Deposit £1 1s.

DECEMBER 11.—**Bolton.**—BOREHOLE.—Sinking of a borehole and construction of other works at Belmont, for the T.C. Mr. John K. Swales, Waterworks Engineer, St. George's-street, Bolton. Deposit £2 2s.

DECEMBER 11.—**Gleneagles.**—SEWAGE WORKS.—Sewage purification at Gleneagles Hotel, for the Caledonian Railway Co. Messrs. Thomson & Scott, 20, Melville-street, Edinburgh. Deposit £2 2s.

DECEMBER 11.—**Hull.**—TRAMWAY TRACK.—Laying about 420 lin. yards double track tramway in Osborne-street, for the T.C. Mr. F. W. Bricknell, City Engineer, Guildhall, Hull.

DECEMBER 11.—**London, W.8.**—SEWERAGE.—Construction of a number of manholes, together with incidental means of ventilation on certain dead ends of sewers in the Borough, for the Royal Borough. Borough Engineer and Surveyor, Town Hall, Kensington, W.8, endorsed "Tender for Sewer Works."

DECEMBER 11.—**Wandsworth.**—ROADS.—For paving Glencairn-road, Hilldown-road, and part of Cricklade-avenue, Streatham; Englewood-road, Clapham; Wincanton-road, Southfields; and part of Ellerton-road, for the B.C. Mr. P. Dodd, Balham High-road, S.W.17. Deposit £1 1s.

DECEMBER 12.—**Bushey.**—TENNIS COURTS.—Construction of two hard tennis courts, in Kentish rag tarpaving, at the King George Recreation Grounds, for the U.D.C. Mr. Ernest E. Ryder, Surveyor, Council Offices, Bushey.

DECEMBER 13.—**Kilmarnock.**—ROADS.—Formation of roads and sewers in connection with Scott-road housing scheme, for the T.C. Burgh Surveyor, Council Chambers, Kilmarnock.

DECEMBER 14.—**Aberdeen.**—WATER MAINS.—Laying of 1½ miles of 4 ft. piping and ancillary works between West Cults and Pitfodels, for the T.C. Mr. George Mitchell, Water Engineer, 41½, Union-street, Aberdeen. Deposit £5.

DECEMBER 17.—**Kensington.**—SEWERS.—Construction of a number of manholes, &c., on dead ends of sewers in the Borough. Borough Engineer, Town Hall, Kensington, W.8.

✱DECEMBER 18.—**Hendon.**—SURFACE WATER DRAINS, &C.—Reconstruction of Station-road, Hendon, within the district. The works comprise the following, or thereabouts:—1,053 yds. lin. 15 in., 12 in. and 9 in. pipe surface water drain with manholes and gullies; 970 yds. linl. 6 in. by 12 in. granite kerb, 11,500 yds. super; creosoted deal block paving on reinforced concrete, 4,000 yds. super; new 2 in. artificial stone paving, together with all other works in connection therewith. Mr. A. O. Knight, A.M.I.C.E., Engineer and Surveyor to the Council, Town Hall, Hendon, N.W. 4. Deposit 10 guineas.

DECEMBER 18.—**Manchester.**—DRAINAGE.—Construction of main drainage work, No. 4, Upper Moss-lane and Gt. Ancoats-street, for the T.C. City Engineer, Town Hall, Manchester. Deposit £10 10s.

✱DECEMBER 19.—**Epsom.**—SEWAGE WORKS.—Constructing (1) sewage tanks, sewers, &c., and for (2) additions to the pumping station at their sewage works Hook-road, Epsom, for the U.D.C. Separate tenders will be required for these works. Mr. E. R. Capon, Engineer and Surveyor, Council Offices, 33, Church-street, Epsom. Deposit £5 5s., endorsed (1) "Sewage Disposal Works," (2) "Additions to Engine Room," respectively.

DECEMBER 20.—**Southport.**—ROADS.—Making good Chesterfield-road and Sandringham-road, Ainsdale, for the T.C. Mr. A. E. Jackson, Borough Engineer, Town Hall, Southport. Deposit £2 2s.

JANUARY 1.—**Littleton.**—SEWERS.—Construction of about 35 yds. of twin 90-in. dia. reinforced concrete conduits and 3,900 lin. yds. of 72-in. reinforced concrete conduit from Littleton to Kempton; also the laying only of 2,000 yds. of 48-in. dia. cast-iron pipe from Kempton to Hampton, together with a concrete intake channel to the Staines Aqueduct, &c., for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C. 1. Deposit £20.

JANUARY 8.—**Argentine.**—SEWERAGE SYSTEM.—Construction of a sewerage system at Mendoza, for the Department of Sanitary Works, Argentine. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

Competitions.

(See Competition News, page 822.)

Auction Sales, Tenders, etc.

✱DECEMBER 5, 6, AND 7.—**Reading.**—Messrs. Omer, Cooper & Povey have received instructions from Messrs. Jones, in consequence of their having disposed of the freehold, to sell at Calcot-garden Nurseries, Bath-road, Reading, about three miles from Reading Railway Station, the whole of the nursery stock, horticultural glass, &c. Auctioneers, 17, Blagrave-street, Reading.

DECEMBER 11.—**London, S.W.**—Messrs. Henry Butcher & Co. have received instructions from Messrs. Rownson, Drew & Clydesdale, Ltd., to sell, without reserve, at the Central Stores Depot, No. 1,701, Stewart's-road, Wandsworth-road, S.W., £5,000,000 to £10,000,000 deal in Government surplus stores. Auctioneers, 63–64, Chancery-lane, London, W.C.2.

DECEMBER 12, 13, 14, AND 15.—**Gretna.**—Messrs. W. L. Tiffen & Sons will sell, by direction of the Disposal Board, at the Institute, Central-avenue, H.M. Factory, Gretna, timber building and building material (Mossband, Gretna Township, Millhill and Dornock Areas). Auctioneers, 20, Lowther-street, Carlisle.

✱DECEMBER 13.—**Kenton, Middlesex.**—Mr. Ernest Owers will sell at the Estate Office adjoining West Hampstead (Met.) Station, freehold site having 145 ft. frontage to Kenton-road, very suitable for shops; also 12 plots in Carlton-avenue, adjoining. Auctioneers, West Hampstead (Met.), Station, N.W.6, and at 200, Finchley-road, Golders Green.

✱DECEMBER 13.—**London, E.C.**—Messrs. St. Quintin, Son & Stanley will sell, by direction of the Commissioner of H.M. Woods, Forests, and Land Revenues, at Winchester House, Old Broad-street, E.C.2, freehold building site, now occupied by premises known as 110 to 116 (even), Curtain-road, and 1 to 10, Union-place, E.C. Auctioneers, 50, Threadneedle-street, E.C.

DECEMBER 13 & 14.—**Abbey Wood.**—Messrs. F. H. & C. E. Clark will sell, at King's Norton Hostels, Harrow Manor-way, Abbey Wood, a quantity of timber and building materials. Auctioneers, Beddington House, Beddington, near Croydon.

✱DECEMBER 19.—**London, S.W.3.**—Messrs. Goddard & Smith will sell, in the Estate Auction Hall, at their Head Offices, 22, King-street, St. James's, by order of the mortgagees, the property known as the Imperial Court Estate, Nos. 13, 15, 17, 19, 21, 23, 25, and 27, Brompton-road, block of offices, shops and showrooms. Auctioneers, 22, King-street, St. James's, S.W.

Public Appointments.

7DECEMBER 4.—**Wakefield.**—Clerk of Works required by the City Corporation for a period of about 10 months to superintend the construction of sewage disposal works. The Town Clerk, Town Hall, Wakefield.

DECEMBER 6.—**Birmingham.**—Director required for the School of Architecture vacant on January 8, 1923, by the retirement of Mr. W. H. Bidlake, M.A., F.R.I.B.A., for the Birmingham Central School of Arts and Crafts. P. D. Innes, Chief Education Officer.

✱DECEMBER 7.—**Salford.**—Resident Civil Engineer and Clerk of Works to supervise, under the direction of the Consulting Engineers, the building construction work of the Agecroft Power Station, by the County Borough Council. Mr. L. C. Evans, Town Clerk, Town Hall, Salford, endorsed "Resident Civil Engineer and Clerk of Works."

✱DECEMBER 11.—**Essex.**—Quantity Surveyor required by the C.C. for the Architect's Department. Mr. John Stuart, F.R.I.B.A., County Architect, Old Court, Springfield, Chelmsford.

NO DATE.—**Abergavenny.**—The R.D.C. is to appoint a Surveyor of Highways and Sanitary Inspector at a joint position salary of £300. Applicants must be able to supervise and prepare plans and specifications for small drainage and sewage works and possess certificate of Royal Sanitary Institute. Applications by December 4.

NO DATE.—**Carmarthen.**—The B.C. is to appoint a Surveyor for whole time service. Applicants must be Associate Members of the Inst. Municipal and County Engineers and have similar qualifications. Salary £350 per annum. Applications to be made by December 4.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans passed by T.C.: Alterations on store at Newbridge, Hardgate, for the Trustees of the late William Sim, per Mr. A. H. L. Mackinnon, architect; motor repair shop and garage, Union Glen, for the Trustees of the late William Sim, per Mr. A. H. L. Mackinnon, architect; bakehouse, 41, Spital, for Mr. Alexander M. Robertson, baker, per Mr. George Watt, architect; extension of shed at Bannermill, for Mitchell & Muil, Ltd., per Messrs. Wilson & Walker, architects; store at Froghall-terrace, for the Aberdeen Jute Co., Ltd., per Messrs. Jenkins & Marr, architects; office, 394, Great Northern-road, for Mr. Alexander Milton, motor hirer; outhouses, 402, Clifton-road, for Mr. Charles D. Brown, cabinet maker; alterations at 10 and 12, Great Western-road, for Mr. James L. Archibald, cabinetmaker; covered gangway at Thistle-place, for Mr. George Cumming, motor cycle agent, per Mr. George Watt, architect; extension of garage, 30, Balmoral-place, for Mr. Charles Leeds, dairyman; lavatories and cloakrooms at Ferryhill Mills, Albury road, for Messrs. Patrick Watson & Sons, manufacturers, per Messrs. Wilson & Walker, architects; alterations to premises, Bedford-road, for the Anglo-American Oil Co., Ltd., per Mr. J. T. Johnstone, architect; tank at Sandilands, for Messrs. John Miller & Co., chemical manufacturers.

BATH.—The Unemployment Grants Committee has approved the scheme of the R.D.C. for a road improvement at Skinner's-hill, Camerton.

BEDFORD.—Plans passed by T.C.: Mr. E. H. C. Inskip, for Mr. A. C. Knight, garage, 5, Park-avenue; Mr. A. W. G. Prosser, conversion to two houses, 28, Park-avenue; Mr. J. B. Thomas, four houses, North Park-road; Messrs. J. & F. Howard, Ltd., for Stirling Foundry Specialities, transformer house, Stirling Foundry, London-road; Mr. J. Clarke, alterations, 13–15, Harpur-street.

BIRMINGHAM.—It was decided at a meeting of the Birmingham Watch Committee to invite tenders for the erection of a new fire station in Ettington-road, Aston.

BLAKENEY.—The Gloucester C.C. has included the provision of additional accommodation at the Central School in this year's estimates.

BRYNMAWR.—The U.D.C. has passed a plan for a garage to be erected for Mr. David Williams.

BUCKIE.—Plans passed: Bungalow, 5, Hall-street, for Mr. J. Cowie; alterations, 4, Cluny-street, for Mr. G. Cowie.

BURTON-ON-TRENT.—The ancient building in Burton-on-Trent, Dame Paulett's Almshouse, is to be restored by the T.C. and used as a new weights and measures office.

EASTLEIGH.—The Southampton C.C. is proposing to apply for sanction to borrow £11,000 for the provision of new police offices and cottages.

EDINBURGH.—The directors of the Royal Maternity and Simpson Memorial Hospital have acquired premises in what was formerly the Leith Town Council Chambers, for additional accommodation when alterations have been made.—St. Cuthbert's Co-operative Association, at the Dean of Guild Court, was granted powers to proceed with the erection of a bakery on the site of Port-Hamilton, Fountainbridge. The building will be 260 ft. square by 70 ft. high, and will cost about £250,000. The architect is Mr. T. P. Marwick, Edinburgh.

* See also our List of Contracts, Competitions, etc.

Pneumatic Clay-Diggers.

[This illustration shows some of the pneumatic clay-diggers at work on the dock extension work at South Shields. The blade may be replaced by a pick point for loosening gravel or dislodging boulders. The tool is made by the Ingersoll-Rand Co., of 165, Queen Victoria-street, E.C. 4.]

ESHER.—Plans passed by U.D.C.: House, King's-drive, for Mr. Strickland; six semi-detached villas, Orchard-lane, Triangular Concrete Construction Co.; house, Fitzalan-road, Claygate, Mr. A. H. Poole; house, Sandown estate, Esher, Mr. W. D. Gravell; house, Portsmouth-avenue, Mr. Macey; house, Emberlane, the Triangular C.C. Co.; two shops, High-street, Thames Ditton, Mr. F. Asbrey.

ETON.—Plans passed by R.D.C.:—Bungalow at Waysbury, for Mr. A. E. Light; bungalow cottage at Salt Hill, for Mr. H. Street; dwelling-house at Iver, for Lord Anslow; additions to Chin Cottage, Iver, for Lord Anslow; hall at Langley, for Mr. E. H. Field; dwelling-house at Farnham Royal, for Mr. H. A. Steel; bungalow at Cippenham, for Mrs. E Strange; house at Denham, for Mr. E. D. Jaques; house at Gerrards Cross, for Mr. J. J. Paskin; and house at Wexham Woods, for Mr. F. W. Vallis.

FIFE.—The Committee appointed to administer the Miners' Welfare Fund in Fife, Kinross, and Clackmannan areas has agreed to an expenditure of £16,000 for the erection of workmen's institutes at Blairhall, Valleyfield, Kirkford, Dundonald, and Wells-green. plans for these having been prepared.

FLEET.—House, Reading-road, for Mrs. E. Franks.

FOLKESTONE.—Messrs. T. W. Heath, Ltd., Chelsea, S.W.3, have signed the contract for the erection of a group of married quarters for N.C.O.'s and other ranks at Hawkinge, near Folkestone.

GLOUCESTERSHIRE.—The programme of the Gloucester C.C. for this year includes the provision of teachers' dwellings at Chelford Hill, Pebworth, Hinton, Newtown and Slimbridge.

GOUROCK.—A new police station is to be erected adjoining the Municipal Buildings. The Dean of Guild Court has granted warrant for the building, and it is expected to commence the work in January.

GRANGEMOUTH.—At a meeting of the Dean of Guild Court warrants were granted as craved by the Scottish Oils, Ltd., for the erection of various buildings, tanks, &c., to the estimated value of £120,000, exclusive of railway works and plant. The erections include huts for the accommodation of ships' crews and a timber jetty at the docks, three double villas, steel tanks, two pump-houses, power-house, two water-cooling towers and reservoir, boiler-house and pump-house, range of workshops and laboratories, weigh-house, &c.

GREENOCK.—The Dean of Guild Court has passed plans submitted by the Corporation for the erection of 84 dwelling houses at Upper Cornhaddock. They will be of the tenement type, and will consist of ten single blocks each containing six houses and two double blocks each containing twelve houses. The dwellings will be of three apartments.

HARPENDEN.—Plans passed by U.D.C.:—House in Park-avenue, for Mrs. I. M. Riches; four houses in Wordsworth-road, for Mr. K. C. Jarvis; additions to a house in Park-avenue, for Mr. H. Steers; motor garage at "Blenheim House," Amenbury-lane, for Mrs. I. M. White; motor house in Jameson-road, for Mr. F. H. Webb; and motor house at "Gorselands," East Common, for Mr. E. C. Jarvis.

HESTON AND ISLEWORTH.—Plans passed by U.D.C.: Mr. A. Alban H. Scott, addition to "Oak Bungalow," Bath-road, Hounslow; Mr. C. S. Avey, two dwelling houses, Wellington-road North, Hounslow; Mr. Nowell Parr, alterations to "The Flower Pot" beer-house, Wellington-road North, Hounslow; Mr. E. Chapman, two shops, South-street, Isleworth; Messrs. Roper, Son & Chapman, two bungalows, Lampton-road, Hounslow; Mr. T. Chapman, three houses, Clare-road, Hounslow; Mr. F. J. Bruce, house, Jersey-road, Osterley; Mr. R. Emmett, house, Grove-road, Hounslow; Messrs. Roper, Son & Chapman, house, Lampton-road, Hounslow.

LLANELLY.—Messrs. Richard Thomas & Co., Ltd. intend building a wharf in connection with the development of ship-breaking industry by the firm.

LLANGADDOCK (MON).—At a public meeting the Llangaddock sewerage scheme prepared in 1912, and estimated to cost at present more than £5,000, was approved, and a resolution calling on the Crickhowell R.D.C. to apply for a grant to enable the work to be immediately proceeded with was passed.

LONDON (HACKNEY).—The L.C.C. has decided to extend the Hackney Institute, at a cost of £9,000.

LOWESTOFT.—The T.C., having applied to the Ministry of Health for sanction to a loan of £100,300 for the construction of a sea-wall, breakwater, and groynes on the North Beach, an official inquiry has been held by Mr. W. M. Cross.

LYDBROOK.—It is proposed by the Gloucester C.C. to provide additional accommodation at the Council School.

MELTON MOWBRAY.—Plans passed by U.D.C.: Five lock-up garages, Charlotte-street, for Mr. W. Muse; store, Rosebery-avenue, for Mr. W. E. Warner; eleven motor garages and two houses, Ankle-hill, for Mr. Clarke.

MIDDLESBROUGH.—Mr. M. G. Weeks, M.I.C.E., Inspector for the Ministry of Health, held an inquiry at Middlesbrough last week into an application by the Corporation for sanction to borrow the sum of £43,810, to cover the cost of reconstruction of the Acklam-street sewer from North-road to the outlet at the River Tees.

MILFORD-ON-SEA.—The Southampton C.C. has sanctioned the Parish Council borrowing £1,000 for the erection of tea-rooms and lavatories on the foreshore.

MUDEFORD.—The Southampton C.C. has purchased a site for a new Council School.

NARBERTH.—The Council is to consider the purchase of a steam disinfecting plant.

NEATH.—The Borough Council is to consider the purchase of a modern fire engine.

NEWPORT (MON.).—The Newport B.C. has decided to acquire the leasehold rights of No. 50, High-street for the purpose of widening the approach road to G.W.R. station. The road from the High-street will be made fifty-five feet wide at its narrowest point. It has been decided to borrow £4,650, when sanction has been obtained, for the scheme. The Ministry of Transport has approved in principle the following scheme and expenditure:—(a) Widening and improving of Barrack-lane between Allt-yr-yn-road and Risca-road, at an estimated cost of £32,680; (b) improving a length of Macsglas-road and constructing new road to join with Cardiff-road at Ebbw Bridge, at an estimated cost of £43,000.

PONTARDAWE.—The U.D.C. has decided to invite tenders for wiring, &c., in connection with the lighting of Godregraig houses. An estimate has been asked for on the proposed approach road construction of Colbren-road.

PONTYPOOL.—The U.D.C. has decided to apply for sanction to borrow £10,000 for the erection of houses.

PORTH (RHONDDA).—A scheme for the extension of the Porth Cottage Hospital, at a cost of £12,500, has been put on foot by the general manager of the United National Collieries. Under the scheme £10,000 immediately required for actual building additions will be raised quickly by contributions from colliery companies and a voluntary levy by the colliers.

POULTON.—Plans passed by U.D.C.: Mr. P. Bullough, house in Derby-road, Poulton-le-Fylde; Mrs. S. A. Talbot, house and premises in Occupation-road, off Blackpool-road, Poulton-le-Fylde.

PRESTON.—Plans passed by T.C.: A. C. M. Lillie, for W. Mears & Co., Ltd., alterations, Mellings-yard, Friargate; P. H. S. Shepperd, for J. Singleton, lock-up shop, South Meadow-lane; A. C. M. Lillie, for E. Hothersall, garage, Newton-road; R. Hothersall, for Ribble Motors, Ltd., workshops, Crown-street; E. J. Andrew, for Messrs. Hepworth, Ltd., alterations, 109 and 110, Fishergate; E. J. Andrew, for W. W. Park, conversion of stables to house and shop, Villiers-street; J. J. Pearson, for G. A. Banks, store-room, Balderstone-road; W. Priddle, for F. W. Woolworth & Co., Ltd., alterations, 31, Fishergate; T. Croft & Sons, Ltd., works, warehouse and stables, Holme Slack-lane; J. Watkinson, alterations and additions, Eldon-street; H. Wilson, for Montague Burton, Ltd., alterations, 5 and 6, Cheapside; J. C. Barnes, for G. W. Moss, house and shop, Roebuck-street:; A. E. Ogden, garage, Garstang-road; N. Fazackerley, two bungalows, Kane-street; T. Blackburn & Sons, Ltd., garage and stores, West View; E. J. Andrew, for T. Southworth, cafe and shop, Ribbleton-avenue; F. Howarth, for T. Beech & Sons, warehouse and store-rooms, 23, North-road.

RAMSGATE.—The Corporation proposes to purchase land for the carrying out of certain improvements on the West Cliff. The scheme includes the erection of a new entrance to the West Cliff Concert Hall.

RHYMNEY.—The Rhymney Valley School Managers have decided to provide a school at Britannia. It was stated that an excellent site is available.

ROSYTH.—Important developments are to take place at the corner of Queensferry-road and Park-road, Rosyth.—A development scheme for the whole corner is to be submitted at an early date to the Town Council. The Scottish National Housing Company have obtained estimates for forty houses on the unbuilt ground to the north-west, which will, on completion, fill up the space unbuilt on between the existing Garden City and the railway station.

SEAFORD.—A Ministry of Health enquiry has been held relative to the application of the U.D.C. to borrow £9,000 for the conversion of the Salts into a pleasure-ground.

SELBY.—Colonel Hawdon, of Selby, has given £1,500 to the vicar and churchwardens of Selby Abbey towards the cost of erecting a church hall on a site formerly presented by himself.

SKEGNESS.—Plan passed by U.D.C.: Offices, Drummond-road, for Mrs. F. N. Ball.

SOUTH WEALD BENTLEY.—The Essex C.C. has approved of the plans submitted by the managers for the rebuilding of the Church of England school, which was burned down.

STANFORD-LE-HOPE.—The Essex C.C. has decided to rebuild bridge No. 194, at an estimated cost of £3,650.

UXBRIDGE.—Plans passed by R.D.C.:—Pair of houses, Ickenham, for the Drummond Construction Co.; alterations to London United Tramway Depot, Hillingdon Heath.

WALTHAM ABBEY.—The Essex C.C. is to contribute to the cost of reconstructing Waltham Abbey Bridge.

WHICKHAM.—The R.D.C. has decided to erect an additional twenty-four houses at Dunston.

WILLESDEN.—Plans passed by U.D.C.: Twenty-two dwelling houses, All Souls'-avenue, Harlesden, for Mr. George Ball; steel work to Club premises, 206, Villiers-road, Willesden Green, by Messrs. Trant Brown & Brightiff, for Legionaire Club, Ltd.; two houses with garages, 93–95, Chatsworth-road, Cricklewood, for Mr. C. W. B. Simmonds; additions, 161, The Broadway, Cricklewood, for Messrs. J. Lyons & Co; two houses with garages, 89–91, Chatsworth-road, Cricklewood for Mr. C. W. B. Simmonds; new factory, Dudden Hill-lane, Willesden, by Mr. James Easton, for Mr. W. F. Dixey; garage, 43A, Gladstone Park-gardens, Cricklewood, by Mr. F. W. Brealy, for Mr. A. W. Gladwell; addition, 36, Priory Park-road, Kilburn, by Mr. C. J. Thurlow, for Mr. A. J. Denham; conversion of basement into motor garage, 23, Christchurch-avenue, Brondesbury, by Messrs. Willard & Co., for Dr. D. E. Harvey; electricity transformer house, Edgware-road, Cricklewood, for H.M. Office of Works; factory addition, 200, Villiers-road, Willesden Green, by Mr. G. A. Sexton, for Mr. J. Portnoi; builders' store, &c., 26, Bridge-road, Willesden, by Mr. H. Shaw, for Mr. R. Avery.

WINDSOR.—Plans passed by R.D.C.:—House, Kennel Ride, for Mr. Martin; oil store, International Stores, Ascot.

WOLVERHAMPTON.—A deputation from the Education Committee is waiting on the Education Department with reference to the proposal to erect an engineering block in connection with the technical college scheme.

FIRES.

BLAENAVON.—A fire, on Friday night, at the Wesleyan Church, Blaenavon, did damage estimated at £2,000, including the destruction of a pipe organ valued at £300.

CAERPHILLY.—Damage to the extent of £30,000 was done by fire at block of buildings known as Underhill Chambers, Bridge-square, Caerphilly, on Sunday night. The premises were (a) Messrs. Briggs & Co., boot dealers; (b) Wm. Powell & Sons, hairdressers; (c) the Blighty Emporium, clothiers; (d) Pearl Assurance Co.; (e) Glamorgan Amalgamated Improved Society; (f) W. Addicott, commission agent; (g) Mr. Illtyd Jones, solicitor; (h) Mr. F. Pigott, mining contractor.

CHADDERTON.—The Avon Cotton Mill has been destroyed by fire.

DURHAM.—A disastrous fire has occurred at Colliery-row, Fence Houses, when the large premises of Messrs. George Graham, Ltd., universal providers, were destroyed.

ISLE OF MAN.—A destructive fire has occurred at the Laxey lead mines.

KIDDERMINSTER.—St. George's Church has been destroyed by fire.

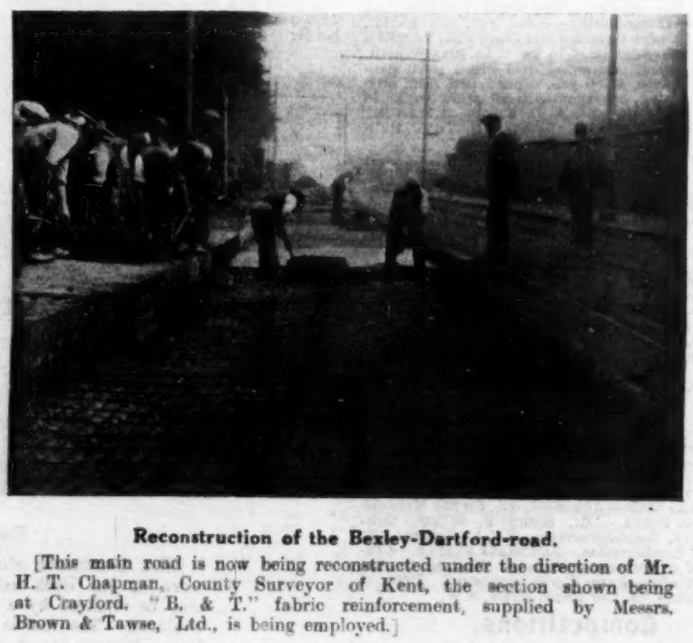
LEEDS.—The United Methodist Chapel in Tempest-road, Beeston Hill, has been gutted by fire.

PONTYCWMMER.—Fire destroyed (causing loss estimated at £3,000) the Hippodrome, Pontycwmmer, on Sunday night. The building was used by the proprietors as a cinema hall.

SOUTHPORT.—Extensive damage has been caused by a fire at the Victoria Hotel, Promenade.

SPENNYMOOR.—Damage amounting to £70,000 was caused by a fire last week at Spennymoor, the Co-operative Stores and premises being destroyed.

WELSHPOOL.—Garth Hall, the Welshpool seat of Colonel George Mytton, one of the most stately mansions in Montgomeryshire, was narrowly saved from complete destruction by fire on Saturday.



Reconstruction of the Bexley-Dartford-road.

[This main road is now being reconstructed under the direction of Mr. H. T. Chapman, County Surveyor of Kent, the section shown being at Crayford. "B. & T." fabric reinforcement, supplied by Messrs. Brown & Tawse, Ltd., is being employed.]

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 17 0

Per 1000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	3 1 0	Best Blue Pressed Staffs.	9 11 6
Do. grooved for plaster	3 3 6	Do. Bullnose	10 1 6
Do. Bullnose	3 16 0	Blue Wire Cuts	7 11 6
Best Stourbridge Fire bricks:—			
2½ in.	11 3 0	3 in.	13 2 0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	22 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
		One Side and two Ends	31 10 0
Headers	21 10 0	Two Sides and one End	32 10 0
Quoins, Bullnose and ½in.		Splays and	
Flats	28 10 0	Squints	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	13 6	per yard,	delivered 2 miles radius Paddington.
Pit Sand	16 0	„ „	
Thames Sand	16 6	„ „	
Best Washed Sand	16 6	„ „	
½ in. Shingle for Ferro-Concrete	14 0	„ „	
¼ in. „ „	15 0	„ „	
½ in. Broken Brick	10 6	„ „	
Pan Breeze	5 6	„ „	

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification Test £3 3 0	£3 8 6
56/- alongside at Vauxhall in 80-ton lots.	
Ferrocrete per ton extra on above	10 0
Roman Cement	8 15 0
Parian Cement	5 13 0
Keene's Cement, White	5 13 0
„ „ Pink	5 8 0
Plaster, Coarse, Pink	3 6 0
„ „ White	3 15 0
„ Fine	5 12 0
Strapite, Coarse	3 16 0
„ Finish	4 4 0
Grey Stone Lime	2 16 6
Chalk Lime	2 16 6
Best Ground Blue Lias Lime	2 18 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 1
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 4
Do. do. delivered on road wagons at Nine Elms Depot	3 5
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 7
Do. do. delivered on road wagons at above stations, per ft. cube	4 8
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. average, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality*.	
Delivered at any Goods Station London.	s. d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 3
6 in. rubbed two sides, ditto „	5 9
3 in. sawn two sides slabs (random sizes) „	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) „	1 5½
1½ in. to 2 in. ditto, ditto „	1 3
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	5 6
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto „	6 0½
4 in. sawn two sides slabs (random sizes) „	2 10
3 in. ditto, ditto „	2 5
2 in. self-faced random flags Per Yard Super	7 11

ARTIFICIAL STONE.

Delivered in London Area in full van loads.	s. d.	
Plain	8 6	per ft. cube.
Moulded	10 0	„ „
Cills	11 0	„ „

WOOD.

GOOD BUILDING DEAL.

Inches	per stan.	Inches.	per stan.
4 × 11	£26 0	3 × 6	£22 10
4 × 9	36 0	3 × 11	32 10
4 × 8	28 0	2 × 11	32 10
4 × 7	26 0	3 × 9	30 0
3 × 8	26 0	2½ × 9	30 0
3 × 7	22 10	3 × 4½	20 10
2½ × 7	22 10	3 × 4	20 10

PLANED BOARDS.

1 × 11	40 0	1 × 9	35 0

PLAIN EDGE FLOORING.

Inches	per sq.	Inches	per sq.
½	20/-	1½	32/6
¾	22/6	1¾	40/-
1	25/-		

WOOD (*Continued*).

TONGUED AND GROOVED FLOORING Inches	per sq.	MATCHINGS (BEST). Inches	per sq.
1	25/-	½	17/6
1¼	32/6	¾	22/-
1½	40/-	1	25/-

Inches	BATTENS.	s. d.
¾ × 2		2 6 per 100 ft.

SAWN LATHS.

Per bundle				0	3 0
Dry Wainscot Oak, per ft. super, as inch	0	2	6 to	0	3 0
¼ in. do. do.	0	1	10½ to	0	2 6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	3 to	0	3 0
Cuba Mahogany	0	3	6 to	0	4 0
Teak (Rangoon, Moulmein or Java), per load	45	0	0 to	50	0 0
American Whitewood planks, per ft. cube	0	16	0 to	0	18 6
Best Scotch Glue per cwt	6	15	0 to	—	
Liquid Glue, per cwt.	4	7	0 to	5	10 0

SLATES.

1st quality slates from Bangor or Portmadoc in truck loads delivered London area. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	41 17 0	18 by 10	23 12 6
22 by 12	38 0 6	18 by 9	20 16 3
22 by 11	35 2 0	16 by 10	19 16 0
20 by 12	33 8 3	16 by 8	15 8 3
20 by 10	28 11 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 0 0
Ditto hand-made ditto	6 10 0
Ornamental ditto	6 15 0
Hip and valley tiles (per dozen) Hand made	0 8 6
Hip and valley tiles (per dozen) Machine made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	13 0 0
Plain Compound Girders	15 0 0
„ Stanchions	17 0 0
In Roof Work	20 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works. 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes. (all sizes).	Fittings, Up to 2".	Fittings, Over 2".	Flanges. Up to 2".	Flanges. Over 2"
Gas	55 %	50 %	55 %	60 %	65 %
Water	50 %	45 %	50 %	55 %	60 %
Steam	45 %	40 %	45 %	50 %	55 %
Galv'd—					
Gas	45 %	42½ %	47½ %	52½ %	57½ %
Water	37½ %	37½ %	42½ %	47½ %	52½ %
Steam	27½ %	32½ %	37½ %	42½ %	47½ %

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 2½	2 5	2 11
2½ in. „	3 9½	2 8	3 8
3 in. „	4 5½	2 11	4 4
3½ in. „	4 10½	3 8	5 1
4 in. „	5 5	4 1	5 10

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	1 10½	1 4½	1 10½
2½ in. „	2 1	1 7½	2 3
3 in. „	2 6	2 0	3 0
3½ in. „	2 11	2 4½	3 6
4 in. „	3 5	2 10½	4 3

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 5/3. .. 5 in., 6/9. .. 6 in., 8/-.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	12 10 0	to	13 10 0
Staffordshire Crown Bars good merchant quality	13 10 0	..	14 10 0
Staffordshire "Marked Bars"	16 0 0	..	17 0 0
Mild Steel Bars	12 0 0	..	13 0 0
Steel Bars, Ferro-Concrete quality, basis price	12 0 0	..	13 0 0
Hoop Iron, basis price	15 0 0	..	16 0 0
„ Galvanised	29 0 0	..	31 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	14 0 0	..	15 0 0
„ „ „ 24 g.	15 0 0	..	16 0 0
„ „ „ 26 g.	16 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	20 0 0	..	21 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	21 0 0	..	22 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	23 0 0	..	25 0 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9ft. 20 g.	19 0 0	..	20 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	19 10 0	..	20 10 0
Ordinary sizes, 6ft. to 9ft. 26 g.	21 10 0	..	22 10 0

METALS (*Continued*).

Per ton in London.	£ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	23 0 0	..	25 0 0
Best Soft Steel Sheets, 26 g.	24 10 0	..	25 10 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	21 10 0	..	23 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

Delivered in London.	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	35 10 0	..	—
Pipe in coils	36 0 0	..	—
Soil Pipe	38 10 0	..	—
Compo pipe	39 40 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	23 10 0	..	—
Do., ex country, carriage forward per ton	24 10 0	..	—
COPPER—			
Strong Sheet per lb	0 2 3	..	—
Thin „ „	0 2 4	..	—
Copper nails „	0 2 3	..	—
Copper wire „	0 2 4	..	—
TIN—English Ingots „	0 1 11	..	—
SOLDER—Plumbers' „	0 0 11	..	—
Tinmen's „	0 1 1	..	—
Blowpipe „	0 1 4	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.	
15 oz. fourths	2½d.	32 oz. fourths	8½d.
„ thirds	4½d.	„ thirds	10d.
21 „ fourths	4½d.	Obscured Sheet, 15 oz.	3½d.
„ thirds	6d.	21 „	5d.
26 „ fourths	5½d.	Fluted 15 oz.	7½d.
„ thirds	7½d.	En'tled 15 „	5½d.
		21 „	7d.
		21 oz.	9d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

Per Ft.	
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 3 5
„ „ „ in barrels „	0 3 7
„ „ „ in drums „	0 3 10
Boiled „ „ in barrels „	0 3 11
„ „ in drums „	0 4 1
Turpentine in barrels „	0 9 10
„ in drums (10 gall.) „	0 10 1
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	55 5 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	77 10 0
Red Lead, Dry (packages extra) per ton	39 0 0
Best Linseed Oil Putty per cwt.	0 17 0
Filocel per cwt.	0 15 6
Size. X D Quality fkn.	0 3 6

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish Outside	0 14 0
Fine ditto ditto	0 16 0
Fine Copal ditto	0 18 0
Pale Copal ditto	1 0 0
Pale Copal Carriage ditto	1 4 0
Best ditto ditto	1 12 0
Floor Varnish Inside	0 18 0
Fine Pale Paper ditto	0 18 0
Fine Copal Cabinet ditto	1 2 0
Fine Copal Batting ditto	1 0 0
Hard drying Oak ditto	0 18 0
Fine Hard drying Oak ditto	0 19 0
Fine Copal Varnish ditto	1 0 0
Pale ditto ditto	1 2 0
Best ditto ditto	1 12 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 12 0
Oak and Mahogany Stain (water)	0 12 0
Brunswick Black	0 9 0
Berlin Black	0 14 0
Knotting (patent)	1 5 0
French and Brush Polish	0 17 6
Liquid Dryers in Terebine	0 10 0
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	0
Add if in clay	" "	1	6
Add for every additional depth of 6 ft.	" "	0	9
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	" "	1	2

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	40	0
Add if in underpinning in short lengths	" "	9	0
Add if in floors 6 in. thick	" "	3	9
Add if in beams	" "	4	6
Add if aggregate 1 : 2: 4	" "	11	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	34	0	0
Add if in stocks	"	8	10	0
Add if in Staffordshire blues	"	24	0	0
Add if in Portland cement and sand	"	3	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat strucks or weathered joint	" "	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	3
Setting ordinary register grates and stoves	each	1	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	5	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	" "	11	0
¾ inch on flats in two thicknesses	" "	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	4

MASON.

		s.	d.
York stone templates fixed	per foot cube	16	3
York stone sills fixed	" "	28	6
Bath stone and all labour fixed	" "	12	0
Portland stone fixed	" "	21	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	79	9
Do. 20 in. × 10 in. Do. Do.	"	90	9
Do. 24 in. × 12 in. Do. Do.	"	99	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	6
Do. joists	" "	6	0
Do. roofs, floors and partitions	" "	6	6
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	42/-	48/-	56/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	60	0
Do. to beams	per ft. sup.	1	6
Centres for arches	"	2	0
Gutter boards and bearers	"	1	1

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/8	2/1	2/3	2/9

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	3
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	4	0

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/4	2/7	2/9
Four-panel Do.	"	2/8	3/0	3/3
Two-panel moulded both sides	"	3/0	3/3	3/6
Four-panel Do. Do.	"	3/3	3/7	3/10

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/9	1/10	2/1
Deal shelves and bearers	"	1/6	1/8	1/11
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	54	0
Do. Do. in flats	"	50	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	10
Copper nailing	" "	0	7

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service	"	1/5	1/11	2/3	3/6		
Do. soil	"						6/2
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64 -		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	9
Do. Do. Sirapite	" "	2	11
Do. Do. Keen's	" "	4	0
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	10
Portland cement screed	" "	2	1
Do. plain face	" "	3	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	4

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	" "	1	4
Obscured sheet	" "	1	8
¼ in. rolled plate	" "	1	0
¼ in. rough rolled or cast plate	" "	1	1
¼ in. wired cast plate	" "	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	0
Knotting and priming	" "	0	8
Plain painting 1 coat	" "	0	11
Do. 2 coats	" "	1	7
Do. 3 coats	" "	2	4
Do. 4 coats	" "	3	0
Graining	" "	2	5
Varnishing twice	" "	1	11
Sizing	" "	0	4
Flatting	" "	0	8
Enamel	" "	1	3
Wax polishing	per foot sup.	0	9
French polishing	"	1	3
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than Tuesday evening.*

* Denotes *accepted.* † Denotes *provisionally accepted.*

‡ Denotes *recommended for acceptance.*

BARKING.—For sewerage works at Creeksmouth, for the U.D.C. Mr. C. J. Dawson, Surveyor, Clock House Chambers, Barking, Essex :—

Woodham & Sons, Catford	£17,672 3 8
Howard Farrow, London	15,830 19 3
T. W. Pedrette, Bush Hill Park	14,526 19 7
Trollope & Colls, Ltd., London	13,781 0 0
Unit Construction Co., Ltd., London	12,903 16 6
Roads and Public Works, Ltd., London	12,079 16 10
Council's Surveyor, Barking	11,825 15 6
*W & C. French, Buckhurst Hill	11,002 2 11

BASFORD.—For foundations and complete brickwork setting of Lancashire boiler. Mr. H. Stone, Clerk, Public Offices, Basford :—

Chimneys, Ltd., London	£367 2 0
H. Brackenbury, Nottingham	319 0 0
Edward Neal, Derby	301 2 0
Everitt & Son, Watnall	280 2 0
J. G. Short & Sons, Nottingham	272 2 0
T. H. Harper, Nottingham	255 0 0
Reading Boiler Setting Co., Reading	239 17 0
G. T. Suter & Son, Nottingham	232 0 0
Topping & Leggat, London	217 14 6
Thomas Warrington, Hyde	215 0 0
G. Hopewell & Son, Nottingham	200 0 0
Power House Components, Ltd., Nottingham	179 2 0
*J. W. Stamp & Co., Nottingham	172 4 6

BRISTOL.—For the conversion of certain wards at Eastville Institution into a dining hall, for the Board of Guardians :—

*H. Barnes	£1,093 16 9

BRYNMAWR.—For supply and laying of approximately 375 yds. of 4 in. diameter and 270 yds. of 3 in. diameter cast-iron water pipes, with valves, hydrants, &c., for the U.D.C. Mr. J. J. Quirk, Surveyor, Council Offices, Brynmawr :—

Nott, Brodie & Co., Ltd., Beaufort	£753 14 4
Beaven & Sons, Ltd., Newport	694 18 9
*Webb & Campbell, Brynmawr	603 4 0

CHESTER.—For reconstruction with granite setts on reinforced concrete foundations of four streets, and the reconstruction with natural rock asphalte on reinforced concrete foundations of City-road, for the T.C. Mr. Charles Greenwood, City Engineer, Town Hall, Chester :—

George-street and Gorse Stacks—

*H. C. Pullar & Co., Manchester	£4,116 9 3

Victoria-road and St. Anne's-street—

*T. Coates, Bury	2,238 8 6

City-road—

*Penmaenmawr & Trinidad Lake Asphalte Co., Ltd., Liverpool	4,149 13 4

*Not including provision of setts.

COGGESHALL.—For reconstruction of culvert on Coggeshall-Colchester main road, for the Essex C.C. :—

*J. S. Norton, Halstead	£311 17 6

ECCLES.—For granite sett paving in Liverpool-road, for the T.C. Mr. T. S. Picton, Borough Engineer, Town Hall, Eccles :—

*D. Snape & Sons, Eccles	£1,558 11 10

EPSOM.—For (*a*) installation of laundry plant, and (*b*) installation of bakery plant, at Eleventh Mental Hospital, for the L.C.C. :—

* (*a*) T. Bradford & Co., W.C.1	£8,368 5 0
* (*b*) W. F. Mason, Manchester	1,807 12 6

(With reference to the first-named tender, we inadvertently gave the name of another firm last week.)

GELLYGAER.—For erection of 40 houses in blocks of four and two, types "A" and "B," on the Heolddu site, for the U.D.C. Mr. P. Jones-Williams, Architect, Council Offices, Hengoed :—

	In Brick.	In Stone.
John Lewis & Sons, Caerphilly	18,178 0 0 ..	—
Richard Jones, Caerphilly	17,012 0 0 ..	—
Evan Jones, Ystrad Mynach	16,475 16 0 ..	—
W. E. Dearman, Bridgend	15,840 0 0 ..	—
Simms, Son & Cooke, Ltd., Nottingham	15,656 0 0 ..	17,656 0 0
A. J. Rossiter, Caerphilly	17,000 0 0 ..	17,000 0 0
W. & R. Lewis, Bargoed	16,337 5 4 ..	16,337 5 4
Thos. James, Ystrad Mynach	16,006 0 0 ..	15,897 0 0
*E. J. Davis & Co., Bargoed	£15,650 0 0 ..	*£15,250 0 0

* "A" type house at £350 15s. each; "B" type house at £384 12s. 9d. each.

H.M. OFFICE OF WORKS (accepted during October) :—

Building Works, &c. : Addiscombe Telephone Exchange—Erection : C. H. Gibson, Ltd., Croydon. Bethnal Green Houses—Slating : Stirling & Johnson, Ltd. London. Borough Employment Exchange—Erection : R. Merton Hughes, London. Bridgend Post Office—Erection : Robert Meara, Abersychan. Broadmoor—Renewal of Floors : Norris & Co., Sunningdale. Derby Repeater Station—Erection : E. Morley & Sons, Derby. East Ashford Houses—Roads, &c. : Peter Harle, Sunderland. Epsom—Ordinary Works, &c. : G. Skelton & Sons, Epsom. Flookburgh—Sewage Disposal Works : J. Gerrard & Sons (1920), Ltd., Manchester. Glossop Post Office—Erection : Middleton, Bros., Glossop. Painting : J. B. Holdgate, Glossop. Plumbing : W. Oliver & Sons, Glossop. Steelwork : Edward Wood & Co., Ltd., Manchester. Hampton Court Palace—Drainage Works : R. Merton Hughes, London. Holloway—Storage Depot : Geo. Slade & Co., Ltd., London, N. Manchester, Branch Post Office—Plastering and Painting : O. W. Williams & Co., Manchester. Plumbing : W. H. Ashcroft & Sons, Manchester. Rotherham Post Office—Steelwork : W. H. Blake & Co., Ltd., Sheffield. Sacriston and Witton Gilbert Houses—Plastering : Peter Harle, Sunderland. Small Heath Employment Exchange—Alterations : J. E. Harper & Son, Ltd., Birmingham. Streatham Telephone Exchange—Alterations : C. H. Gibson, Ltd., Croydon. Thornton Heath Telephone Exchange—Alterations : A. G. Winters, London. Iron Staircase : Shinkfield's, Ltd., London. Walton (Liverpool) Telephone Exchange—Erection : Brown & Backhouse, Liverpool. Wednesbury Post Office—Extension : E. Crowder, Birmingham. Steelwork : The Frodingham Iron and Steel Co., Ltd., Scunthorpe. Whitley Bay Post Office—Erection : The National Building Guild, Ltd., Manchester. Woodford Green Post Office—Alterations : H. Lacey & Sons, Luton. Ylewsley Houses—Plastering : G. A. Wilson, Hounslow.

Engineering Works.—Coventry Sorting Office—Heating : W. A. Bennett, Coventry. Cricklewood Chart Factory—Heating, &c. : The Progressive Engineering Co., Ltd., Leicester.

Painting, &c.—J. Scott Fenn, London ; Field Signs (Registered), Nottingham ; Hampton & Sons, Ltd., London ; Johnston & Robertson, Glasgow ; John Scott & Co., Middlesbrough.

Wood Block Flooring.—Crewe Sorting Office : A. M. Macdougall & Son, Glasgow. Coventry Sorting Office : Acme Flooring and Paving Co. (1904), Ltd., London, E.

Furniture and Fittings.—Barnstaple Cabinet Co., Barnstaple ; J. B. Hay & Co., Dundee ; Lang Propeller, Ltd., Weybridge ; Robert Young's Construction Co., Ltd., London.

HORLEY.—For erection of a house at Povey Cross, for Mr. T. W. Moore. Mr. Blunden Shadbolt, Victoria-road, Horley, Surrey :—

H. Vigar, Copthorne	£1,472
E. E. Mitchell, Horley	1,456
T. Wickens, Charlwood	1,380
J. Crewdson, Horley	1,194

HORLEY.—For erection of house, for Mrs. B. A. Longuehaye. Mr. Blunden Shadbolt, Victoria-road, Horley :—

*W. F. Tanner	£420

KIRKCONNEL.—For erection of 22 cottages of three and four apartments, for the Thornhill D.C. Mr. W. Scott, architect, Sanquhar. Quantities by Mr. J. Baird, 261, West George-street, Glasgow :—

Brickwork, &c.	
*J. Laing & Son, Ltd., Carlisle	£3,591 13 11
Joiner—	
*J. Findlay & Son, Mauchline	2,953 1 1
Slater—	
*A. C. Whyte & Co., Glasgow	1,681 5 0
Plumber—	
*Drummond & Son, Sanquhar	1,302 2 10
Plasterer—	
*Pollock Bros., Annan	1,004 16 3
Glazier—	
*J. Cullen, Sanquhar	40 17 6

LATCHINGDON.—For repairing and widening bridge, for the Essex C.C. :—

*W. & C. French, Buckhurst-hill	£533 18

LONDON.—Construction of paddling ponds at Battersea Park, Bethnal Green Gardens, Highbury Fields, and London Fields, for the L.C.C. :—

Holland & Hannen & Cubitts, Ltd., S.W.	£7,927
Holliday & Greenwood, Ltd., S.W.	7,562
J. Garratt & Son, S.W.	6,901
K. Holst & Co., S.W.	6,655
G. Greenwood & Sons, Ltd., S.W.	6,133
D. G. Somerville & Co., Ltd., S.W.	5,904
Howard Farrow, N.W.	5,789
*G. J. Anderson, E.	5,333

LONDON.—For painting at Abbey Mills Pumping Station, for the L.C.C. :—

Stoneley & Co., E.	£3,760 13 1
W. Harris, E.	2,709 0 0
Rose & Martin, E.	2,647 14 4
Douglass, Halse & Co., Ltd., S.E.	2,234 0 0
Stevens & Sons, N.	2,091 8 6
Arthur H. Inns, E.C.	1,896 1 6
The British Renovating Co., Ltd., E.	1,806 10 0
R. Wollaston & Co., E.	1,738 8 5
W. G. Beaumont & Son, E.	1,697 19 5
The National Building Guild, Ltd., W.C.	1,561 5 8
Edwards Construction Co., Ltd., S.E.	1,462 15 10
G. H. Miller & Co., E.	1,287 7 0
Walter Lawrence & Son, Ltd., E.C.	1,153 0 0
*Vigor & Co. (Poplar), Ltd., E.	1,099 13 1

LONDON.—For paving works in Biddulph-road, for the Paddington B.C. :—

*Parr Head & Clements Knowling, Ltd.	£2,577

LONDON.—For erection of flats over shops at 114-115, Tottenham Court-road. Mr. A. H. Middleton, architect and surveyor :—

Wallace & Wallace	£10,428
Wood Bros.	10,285
Arthur Phelps & Wilton	9,739
Charles Hammond	9,666
London Structural Co., Ltd.	9,619
F. Foxley & Co., Ltd.	9,514
W. S. Barton & Co.	9,470
Higgs & Hill, Ltd.	9,270
Holland & Hannen & Cubitts, Ltd.	9,250
A. E. Symes	9,179
Battley, Son & Holness	9,166
Hickman, Ltd.	9,075
W. H. Cooper	8,960
William F. Blay, Ltd.	8,898
Ford & Walton, Ltd.	8,800
Thomas Shillitoe	8,800
John McManus, Ltd.	8,667
J. Dixon (London), Ltd.	8,640
C. Miskin & Sons, Ltd.	8,635
W. Alban Richards & Co., Ltd.	8,560
Galbraith Bros., Ltd.	8,500
The Unit Construction Co., Ltd.	8,475
T. W. Heath, Ltd.	8,435
J. E. Billings & Co., Ltd.	8,398
Arding & Hobbs, Ltd.	8,393
Wm. Moss & Sons, Ltd.	8,315
Y. J. Lovell & Son	7,928

LONDON.—Construction of first section of the south-western storm relief sewer, for the L.C.C. :—

	Brick Sewer.	*Iron Sewer.*
Walter Jones & Sons, S.W.	£106,808 17 3	—
Do. (alternative (ii))	107,839 14 2	—
Charles Brand & Son, S.W.	—	£81,595 2 2
James Byrom, Ltd., Bury	75,201 12 0	—
C. E. Buchan & Co., Ltd., Brighton	75,027 14 0	83,320 5 8
Davidson & Sykes, Ltd., S.W.	73,784 2 6	67,940 5 6
Do. (alternative (ii))	78,751 13 6	71,747 12 6
Walter Scott & Middleton, Ltd., S.W.	72,887 13 3	87,994 5 5
John Price & Son, S.W.	68,371 16 6	80,037 16 9
Baldry, Yerburgh & Hutchinson, Ltd., S.W.	68,167 2 3	86,761 14 4
Kinnear, Moodie & Co., W.	67,822 1 6	—
Perry & Co. (Bow), Ltd., S.W.	66,726 12 0	87,219 14 9
Consolidated Construction Co., Ltd., E.C.	58,396 15 6	66,640 4 9
Do. (alternative (ii))	61,737 14 3	70,320 16 9
Wm. Muirhead, Macdonald, Wilson & Co., Ltd., S.W.	55,904 3 0	72,251 16 7
Henry Boot & Sons (London), Ltd., S.W.	55,075 2 11	75,016 3 9
Unit Construction Co., Ltd., W.	54,344 12 0	—
*Mitchell Brothers, Sons & Co., Ltd., S.W.	*52,453 11 0	66,163 15 11

MORPETH.—For re-erection of manager's house, for the Stakeford Social Club. Mr. C. F. Murphy, architect, Lloyds Bank Chambers, Morpeth :—

Gordan & Sons, Morpeth	£405 14

PANTEG.—For the construction of swimming baths at Staffordshire-road, Griffithstown, for the U.D.C. :—

*Messrs. Monks, Newport	£1,353

PONTARDAWE.—For sewer work at Cwmllynfell :—

*Mr. T. J. Williams, Pontardawe	£78 10 0

For extension of Bailey-street sewer, Brynamman :—

*Mr. W. B. Morgan, Ystradgynlais	£293 1 3

For extension of Gwaencaegurwen Cemetery :—

*Mr. William Squires, Pontardawe	£294 10 5

POULTON.—For testing installation at Council offices, for the U.D.C. :—

*Dawson & Sons, Manchester	£164

PRESTON.—For construction of abutment walls, in connection with new bridge at Oxheys, for the T.C. :—

*J. M. Firth, Todmorden	£12,450

RETFORD.—For the erection of new business premises, Carolgate, for Messrs. Fletcher & Son, Ltd. Mr. W. Southall, M.S.A., architect :—

T. Hopkinson, Retford	£2,320 0
J. Swannack, Retford	2,266 10
G. Hurst & Son, Retford	2,149 0
G. Fenton, Retford	1,940 0
*A. Richmond & Sons, Retford	1,900 0

RETFORD.—For extensions to offices for the Ordsall Wire Mills. Mr. W. Southall, M.S.A., architect :—

H. Arnold & Co., Doncaster	£812 0 0
A. Richmond & Son, Retford	774 0 0
G. Hurst & Son, Retford	769 0 0
J. Swannack, Retford	696 10 6
*T. Hopkinson, Retford	680 0 0

STRATTON ST. MARGARET.—For alterations at the Institution, for the Guardians of Swindon and Highworth Union. The Clerk, Union Offices, 17, Bath-road, Swindon :—

A. J. Dore, Bristol	£139 18 0
P. Chick, Highworth	115 0 0
Pope Bros., Swindon	114 10 0
G. W. King, Lechlade	107 15 0
A. H. Capper, Swindon	106 10 0
*E. W. Beard, Swindon	105 7 6

THAXTED.—Rebuilding of bridge at Thaxted, for the Essex C.C. :—

*A. J. Arnold, Chelmsford	£940 12

THORNHILL.—For construction of roads and footpaths, and incidental work at Kelloholm site, for the D.C. Mr. William Scott, architect, Sanquhar :—

Carrick & Sons, Dumfries	£1,868 9 0
P. Campbell, Old Cumnock	1,750 2 3
J. C. Haggerty, Irvine	1,548 4 9
*Gibson & Co., Sanquhar	1,540 14 1

TYNEMOUTH.—For providing and fixing new cantilevers to support footway of bridge at Howden-road, for the T.C. :—

*Wright, Anderson & Co.	£220

TYNEMOUTH.—Erection of seven blocks of houses at East Howden and seven at Chirton, for the T.C. :—

*Durham & Veevers	£8,079

WHITLEY.—For making up Cliftonville-gardens Bideford-gardens and Ventnor-gardens, for the U.D.C Mr. A. J. Rousell, Surveyor, Council Offices, Whitley Bay :—

Durham & Veevers, Gateshead	£2,290 0 0
D. G. Sommerville & Co., Newcastle	1,369 10 6
Alston Limestone Co., Newcastle	1,169 18 0
J. H. Mauchlan, Newcastle	1,117 0 0
S. Oake & Co., Ltd., Hebburn	1,015 0 0
M. D. Young, Hexham	940 1 0

WHITLEY BAY.—For converting the Park Hotel into public offices, for the U.D.C. Mr. A. J. Rousell, Surveyor, Council Offices, Whitley Bay :—

T. Curry & Son, Newcastle	£3,008 0 0
S. Miller, Newcastle	3,038 0 0
Thos. Lumsden, Jarrow	2,932 2 11
Jos. Wilkinson, Gateshead	2,887 0 0
Fred. Holmes, Whitley Bay	2,883 12 3
J. M. Dawson, Whitley Bay	2,814 19 3
Carruthers & Salt, South Shields	2,800 0 0
W. G. Armstrong & Co., Newcastle	2,800 0 0
Henderson Bros., South Shields	2,699 14 9
Ben. Peel, Tynemouth	2,636 9 0
Richard Baxter, Blyth	2,550 0 0
J. W. White, Sunderland	2,545 0 0
J. H. Craven, Newcastle	2,523 5 9
S. F. Davison, Newcastle	2,424 0 0
J. Dagg & Son, Newcastle	2,398 14 6
D. G. Sommerville & Co., Newcastle	2,350 0 0

TRADE NEWS.

The Unit Reinforcement Construction Co., Ltd., Manchester, write to say that the reinforced concrete work at the Piccadilly Picture Theatre, Manchester, was designed and carried out by them.

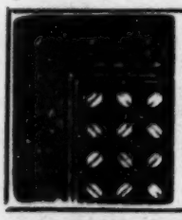
Boyle's latest Patent "Air-Pump" Ventilators have been applied to the Corporation of Coventry Gas Works, Foleshill, Coventry. These were supplied by Messrs. Robert Boyle & Son, ventilating engineers, Holborn Viaduct London.

Messrs. W. Nicholson & Son (Leeds), Ltd., builders and timber merchants, have purchased the whole of the stock of walnut, mahogany and other hardwoods from Mr. Parkinson, Liverpool. Messrs. Nicholson now hold large stocks of dry walnut, figured walnut, and mahogany.

In connection with the Trocadero Cinema, Liverpool, Messrs. Musgraves (Liverpool), Ltd., Dale-street, Liverpool, manufactured the whole of the sanitary fittings.

Mr. F. R. Hipperson, building contractor, Railway Works, Trowse, Norwich, announces that he has opened an office at 2–4, Broad-street-place, E.C.2., where he will be represented by Mr. W. S. Daws.

The Crompton U.D.C. have placed the work of surfacing the roadways and footpaths at Princess-road and Moor-street Housing Sites, Shaw, in the hands of Messrs. William Shepherd & Sons, Ltd., Milkstone, Rochdale. "Asphaltic Slag for Roads" will be used on the carriageways, and asphaltic limestone on the footways.



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